Prepared by the Ministry of Forests and Ministry of Environment, Lands and Parks
In co-operation with Forest Renewal BC.

Resource Management Plan

Guidelines for the Development of Resource Management Plans for 2001 - 2002

May 31, 2000

Section 1

Resource Management Plan Overview

Introduction

The Ministry of Forests (MoF) and the Ministry of Environment Lands and Parks (MELP) are mandated by legislation to undertake planning functions related to the management of Crown forest land. The Executives of both ministries have directed ministry staff to implement resource management planning to identify forest resource management needs and priorities.

Resource management planning was introduced to both ministries in 1998 as a way to link resource management objectives with investment making decision and project selection. The initial planning process was based on defined Forest Renewal BC (FRBC) land based programs (e.g. Enhanced Forestry, Watershed Restoration; and Operational Inventory Programs) and related ministry programs (e.g. forest health maintenance, road and bridge maintenance; and bridge replacement). The following year saw several changes to the process resulting from a decrease in FRBC funding, a refocusing of FRBC's strategic objectives and a shift towards more strategic based ministry objectives and performance measures. The 2000-01 Resource Management Plan (RMP) included the FRBC strategic objectives or components (Sustainable Harvest, Enhancing Environmental Values, and Strengthening Sustainable Forest Management). It also included four ministry programs or components (forest health maintenance, current reforestation, road and bridge maintenance, recreation site and trail maintenance) which had previously been eligible for FRBC funding, albeit for a short period of time.

The RMP is a compendium of resource management objectives and priorities, determined by the MoF and MELP that provides the basis for funding agency investment decisions. The RMP will be used to direct FRBC investments, as well as to direct other government and partnership funding towards MoF and MELP resource management objectives.

The following points broadly describe the RMP process:

- the RMP provides the necessary information for investors to make informed investment decisions;
- the RMP is developed with full involvement of licensees;
- the RMP is based on best available information at the time of the plan; and
- the RMP considers TSA objectives and priorities for all components and additionally includes TFL and Woodlot Licence objectives and priorities in the FRBC Strategic Objective components.

The RMP process for 2001-02 will be similar to prior year's, however this year's guidelines is intended to provide more clarification around:

- The overall RMP structure, process including tracking and evaluation, tasks, timeframes, etc.;

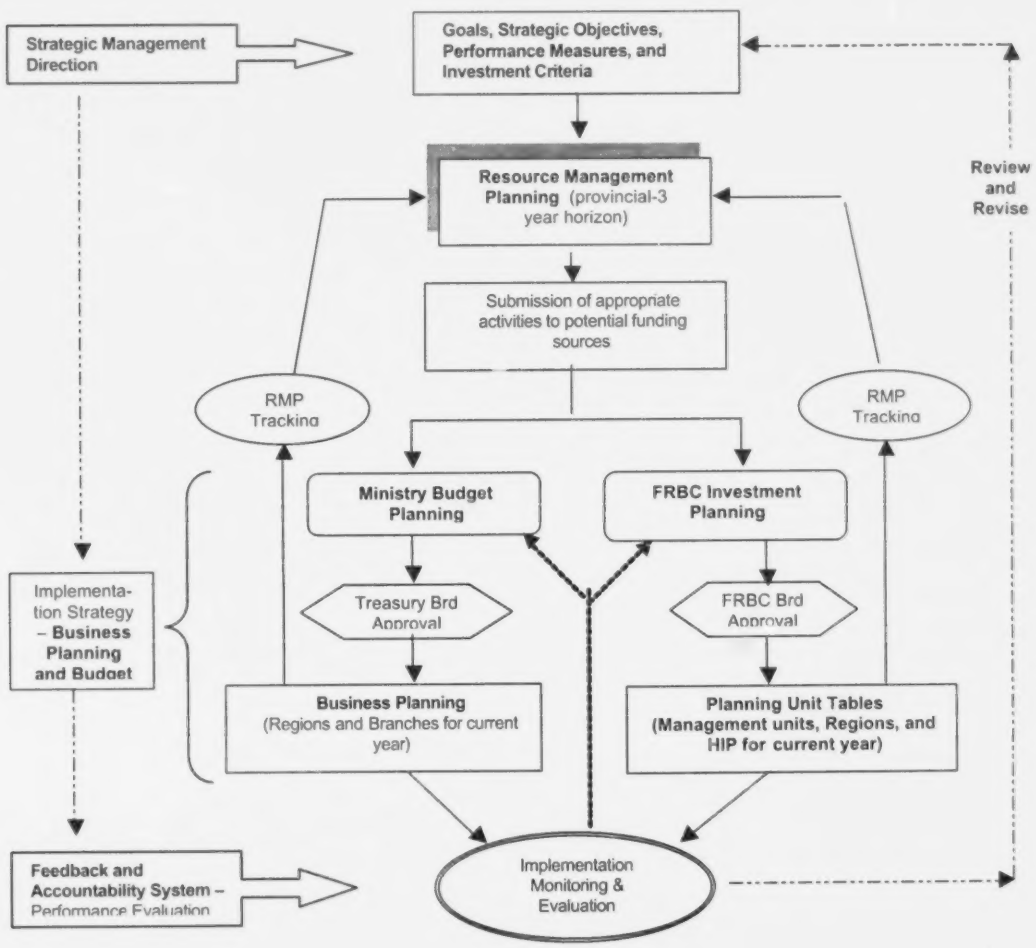
- The ministry components of the RMP as to roles and responsibilities, process, content and eligibly criteria;
- The separation of FRBC's investment management role from the ministries stewardship rule; and
- FRBC's Forest and Environment Investment Plan (FEIP) process.

RMP Linkage to Strategic Direction and Business Planning

With the forest sector facing structural change and FRBC's significantly reduced revenues, FRBC instituted a more strategic, planned approach to the identification and implementation of land based investments. In 1999/00, FRBC initiated the shift to strategically driven planning by phasing out funding for activities and programs which were not core to FRBC's strategic plan. In 2000/01 and onwards, the shift is being accelerated as investments are focused on core programs and activities that generate the highest possible returns.

In addition, the ministries are implementing a strategic management framework, which allows ministry strategic plans to integrate with their business planning and budget cycles. Figure 1 identifies where the RMP links with strategic direction and business planning.

Figure 1 – RMP Process and Linkage to Strategic Direction and Business Planning


Strategic Management Direction
Goals, Strategic Objectives, Performance Measures, and Investment Criteria
Review and Revise
Resource Management Planning (provincial-3 year horizon)
Submission of appropriate activities to potential funding sources
RMP Tracking
RMP Tracking
Ministry Budget Planning
FRBC Investment Planning
Implementation Strategy – Business Planning and Budget
Treasury Brd Approval
FRBC Brd Approval
Business Planning (Regions and Branches for current year)
Planning Unit Tables (Management units, Regions, and HIP for current year)
Feedback and Accountability System – Performance Evaluation
Implementation Monitoring & Evaluation

Purpose of the RMP

The Resource Management Plan is a tool that provides resource agencies, as well as any potential funding sources, with prioritized resource management needs that will support budget planning and allocation processes.

The purpose of the RMP is to:

1. Identify MoF and MELP management resource objectives and priorities;
2. Recommend investment opportunities in support of FRBC's strategic objectives eligible for investment funding;
3. Identify funding requirements for ministries' other objectives and resource needs (i.e. include eligible activities under all components);
4. Assist in the budget planning and allocation process by providing:
   - background documentation to FRBC and Treasury Board submissions;
   - better understanding of where branch and region resources should be focused;
5. Enable the tracking of:
   - funded and completed resource activities to support strategy driven performance targets;
   - resource activities which have not been funded to identify associated ramifications; and
6. Provide information on various criteria and indicators towards achieving sustainable forest management (i.e. certification).

RMP Guideline Key Principles

The key principles underlying the RMP guidelines are to:

1. Ensure that existing resource management objectives, strategies, and priorities form the basis of plan development;
2. Ensure strategies and programs planned for and delivered through this planning process are in keeping with the legislative mandate of the *Ministry of Forests Act* and the *Ministry of Environment Act*;
3. Encourage satisfactory technical consultation with licensees and other directly affected stakeholders; and
4. Provide a more consistent approach towards the development of RMPs and the prioritization of activities.

RMP Target Audience

The RMP is intended to provide resource needs and priorities to the following:

- Ministry and FRBC Executives, Branch Directors;
- MoF / MELP regional managers, FRBC regional directors, MoF district managers; and
- Other potential funding sources as they become available.

RMP Resource Activities

The RMP is comprised of activities that meet the eligibility requirements as per the ten (10) components discussed in Section 2.

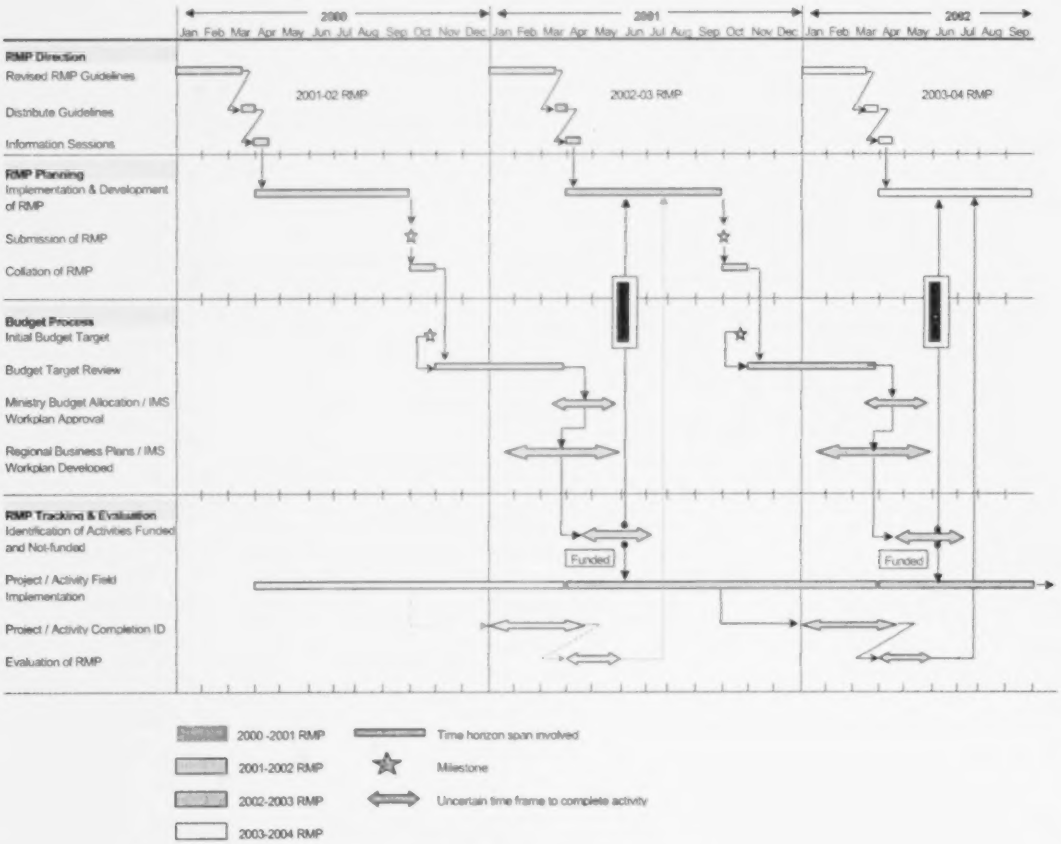
The RMP does not include any of the following:

- Activities currently covered by the MoF Small Business Forest Enterprise Program account
- MoF protection activities (i.e. wildfire suppression and prevention);
- Basic silviculture activities required under the Forest Practices Code of British Columbia (FPC);
- Administrative funding (i.e. staffing and support costs)

RMP Tasks and Timeframes

Figure 2 identifies the major tasks involved / associated with the RMP process, their interaction and estimated timeframes.

Figure 2 - RMP Tasks and Timeframes



There are four main tasks involved during the RMP process:

1. Direction – ensures that the RMP framework and associated component guidelines are current and made available to staff in a timely manner, including information sessions held in each region;

2. Planning – implementation of the RMP guidelines for each component in the regions/districts;

3. Budgeting process – the RMP is collated and supports the budget development and allocation processes;

4. Tracking and evaluation – identifies component activities that are funded, not funded and completed. Activities not funded and not completed should be incorporated into the following years RMP. Evaluation of the RMP will be done once the corresponding field season, in which the activities identified in the RMP are to be completed, is finished. The RMP evaluation will review the activities identified, funded, and completed by priority and will be used to review and/or revise agency goals, objectives, performance measures and investment criteria.

   The time to complete the cycle for an RMP, (i.e. from the initial direction to the evaluation), is approximately 2 ½ years.

MoF, MELP, and Forest Renewal BC Strategies

MoF and MELP Resource Management Strategy

The RMP process addresses the priorities for land based activities from the perspective of biological needs and forest resource management priorities. It is designed to provide guidance to Forest Renewal BC and other agencies in determining the best activities for investments, regardless of the funding source or who is actually completing the work.

Towards these ends, the RMP should satisfy a variety of purposes. It will examine land based resource needs and priorities in terms of:

- commitments, recommendations and links to other land and resource management plans;
- the long term resource implications of current investments;
- the value, risks and benefits of the various activities and treatments;
- the necessary timelines to meet resource management objectives;
- delivery recommendations, viable options and consequences of not carrying out the activity;
- consistency within programs and between delivery centres; and
- providing resource investment recommendations consistent with Forest Renewal BC investment principles and ground rules.

Forest Renewal BC Investment Strategy[1]

Forest Renewal BC's investment strategy, for the long term, is to:

- invest in land based activities to grow more high value timber, to restore watersheds damaged by past forest development activities, and to increase knowledge, techniques and innovations for managing forests sustainably; and,
- increase the size and economic contribution of the value-added wood manufacturing sector.

[1] Excerpt from Forest Renewal BC Strategic Plan 1999 - 2003

RMP Submission

For each regional RMP, the components pertaining to FRBC strategic objectives (SH, EEV, and SSFM) must be submitted to the FRBC Regional Director by September 30, 2000. The complete regional RMP, including the FRBC strategic objective components and the ministry components must be submitted to Corporate Policy and Planning Branch, Ministry of Forests by October 6, 2000.

Section 2

Resource Management Plan Components

Introduction

The RMP process has gone through several changes in the last year resulting from a decrease in FRBC funding, a refocusing of FRBC's strategic objectives and a shift towards more strategic based ministry objectives and performance measures. The 2000-01 RMP, which was recently completed by MoF and MELP regional staff, included the FRBC strategic objectives or components (i.e. SH, EEV, and SSFM) and four ministry components (i.e. forest health maintenance, current reforestation, road and bridge maintenance, recreation site and trail maintenance) which had previously received funding from FRBC, albeit for a short period of time.

The 2001-02 RMP includes additional ministry components (i.e. Non-status Road Deactivation & Rehabilitation and Forest Resources Inventory) that may be eligible for FRBC funding under the EEV and SSFM components respectively. The ministries recognize these additional components as essential resource activities for which ministry base (vote) funding will be pursued.

The following are all the components that must be included in the RMP for 2001-02. Guidelines for these components are provided under the identified sub-section and are posted on the following Internet site:

http://www.for.gov.bc.ca/CPP/rmpguidelines/guidelines.htm

2.1 Current Reforestation;

2.2 Enhancing Environmental Values;

2.3 Forest Health Maintenance;

2.4 Forest Resources Inventories;

2.5 Forest Service Road Management;

2.6 Non-Status Road Deactivation and Rehabilitation;

2.7 Recreation;

2.8 Strengthening Sustainable Forest Management;

2.9 Sustainable Harvest; and

2.10 Research. - [In order to tie identification of knowledge gaps and research more closely to operational planning in the EEV, SH and SSFM RMP components, the links between the Research Program and RMPs have been described in this section for 2001/2002. Future RMP guidelines are expected to include integration of Research into the separate FRBC RMP components.]

Section 2.1

RESOURCE MANAGEMENT PLAN

GUIDELINES FOR CURRENT REFORESTATION COMPONENT

Prepared by
Ministry of Forests

March 17, 2000

Electronic version of tables are available at www.for.gov.bc.ca/hfp/hfp.htm

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Executive Summary

As part of the RMP completion process the Ministry of Forests' (MoF) districts report their funding needs for current reforestation activities. This document provides guidelines for reporting MoF funding requirements for current reforestation management.

Current Reforestation

Current reforestation activities plant and tend areas that have been denuded on areas not covered by other programs or obligations.

Standard reporting formats provided last year for current fire and pests will be used again. They must be completed to facilitate summarization of activity and funding opportunities.

Current Reforestation

This funding source is for activities required to establish a free growing stand on :

- Areas deforested by fire or pests from October 1, 1987 to the present, which have not been salvage harvested and are exempt from the legislative requirements of the Forest Practice Code Act sections 22(5) (conditions that may apply to a TFL / TL) or 22(6) (conditions that may apply to a forest licence or timber sale licence).
- Reforestation of trespass areas
- Reverted Forest Licence obligations since 1988 *
- Timber Agreement Lands

* licensee surrenders licence and no other licensee assumes the obligation through purchase

Funding Priority

Priorities may be set in Higher Level Plans. In the absence of such priorities, prioritize based in part on the following considerations:

Critical:

- Obligatory activities in very close proximity to communities, or in areas of visual or environmental sensitivity where a high public expectation exists for prompt treatments

High Priority:

- Activities required to meet legal obligations on areas covered under a silviculture prescription (SP) prepared under section 22(1)(b). The commencement date for these SP's is the date the district manager gives effect to the prescription.
- Brushing that is required to protect existing investments and ensure establishment of a free growing stand

Low to No Priority

- Areas coded as inoperable, environmentally sensitive, outside the timber harvesting landbase or deemed by the district manager to be too small, too inaccessible, or too remote should not be treated.

However areas categorized as too small, too remote, or too inaccessible but within the timber harvesting land base may warrant scheduled stocking survey assessments so that over time the land status can be revised to satisfactorily restocked as natural ingress occurs.

Constraints to consider

1. Forest health concerns should be addressed when determining silviculture treatments for each opening.
2. In some cases extended regeneration dates and reduced stocking standards may be appropriate where an SP is required but the treatment costs of a standard silviculture regime would be prohibitive.
3. Aerial seeding is not generally recommended due to a history of poor results. However, it is recognized that site specific considerations may warrant the use of aerial seeding.
4. The cumulative cost of all brushing treatments should not exceed $1500 per hectare. Where average district costs are proposed to be higher than this, document the rationale for the higher costs.
5. Biodiversity requirements should be assessed when determining actual treatments and extent and pattern of projects across the landscape.

Seedling Costs

Payment for seedlings sown in SPAR under the coding VFP will be paid for at headquarters. Districts need not request funding for these seedlings. However, districts will be responsible for payment of seedlings purchased for Current reforestation planting from other funding sources.

Bark Beetle and Forest Health Budgeting / Allocation Guidelines

[original distributed to regions and districts, March 8/00]

General Description

The Forest Service and the Ministry of Environment, Lands and Parks (BC Parks) will be working together to address the current bark beetle situation in British Columbia. The purpose of this expanded bark beetle management programme is to protect the "working forest" from the ravages of bark beetles and to minimise impacts on resources.

In this second year of the bark beetle programme, the budget development and allocation will be more formalised. Allocations will be based upon the budgets developed by BC Parks and forest district staff. Park's district staff need to be consulted in the development of forest district budgets. The intent of this budget development and allocation process is to provide documentation of a rational funding process and to document clear objectives.

The Forest District Manager is responsible for preparing a stewardship plan that encompasses bark beetle management in the forest district. Consultation with licensees, MELP Parks, and other stakeholders is necessary to develop a comprehensive plan that will clearly define the respective roles and activities of Forest Service, BC Parks, and others in district bark beetle management. District plans will drive the regional plan that will, in turn, drive the provincial bark beetle management plan.

Forest district worksheets (following pages) will be completed by forest district staff and summarised at the respective forest region. That summary report will be forwarded to Forest Service headquarters (district worksheets will be appended). The provincial package will be reviewed critically and, where funds requested exceed funds available, adjustments will be made after consultation with regions and districts.

Two allocations will be made at times that relate to the activities proposed. Very generally, funding for activities such as trap trees, pheromone baiting, continuing projects, start-up projects and overview surveys will be allocated in April; funding for ground surveys, fall & burn, *etc.* will be allocated in September. The second allocation may be adjusted after the preliminary results of aerial overview surveys have been reviewed.

The stewardship plan, in combination with resultant bark beetle activity, will logically lead to the following years' plans.

Bark Beetle and Forest Health (General) Plans

For Forest Service staff this budgeting and allocation process includes both bark beetle and general forest health activities.

Timelines

Time, unfortunately, is tight.

Worksheets are to be submitted by the districts to their respective region by March 22nd, 2000.

Regional summaries are required in headquarters by March 24th, 2000.

Reporting

At this time, it is anticipated that reporting requirements will be less onerous than that which was required this year.

Financial reporting can be accessed through CAS.

Activity outputs (including BC Parks) will be required at three times throughout the year:

1. August / September (pre-second allocation)
2. mid-December (to determine project progress, funding surpluses / pressures)
3. March 31st (as an annual project wrap-up)

As well, financial summaries that detail:

- allocation
- expended
- encumbered
- forecast
- balance (surplus / deficit)

will be required at the three reporting times noted above. However, there may be requests for updates at other than these three reporting times.

Bark Beetle and Forest Health Budgeting / Allocation Worksheet

Region _____ **District** _____

Proposed Budget:

	Required 1 April	**? for 2000/01**
Parks Bark Beetle $$	_____	_____
Forest Service Bark Beetle $$	_____	_____
Forest Service Forest Health General $$	_____	_____

Bark Beetles

Management Objectives

- Summarize from district beetle management plans and discussions with BC Parks and other stakeholders.
- State strategy (or mix of strategies) contemplated for forest district (*e.g.* prevention, control, salvage, *etc.*).

Resource Values at Risk

- Brief qualitative description of resource values in forest district and how they could be affected by bark beetle activity.
- Brief description of forest cover and the contribution of target species (*e.g.* lodgepole pine, interior spruce, Douglas-fir) to the allowable annual cut and to other resource values.
- Which parks and protected areas are included in this district proposal?
- Other values.

Bark Beetle Status

- Describe broad bark beetle hazard (*e.g.* Safranyik mountain pine beetle provincial hazard map)
- District-wide preponderance of susceptible forest types.
- Current bark beetle status from overview surveys and qualitative five-year histories

- Mapped attack areas *vs.* susceptible area ratio
- "R" value as determined by green:red ratio, with comments on brood sampling if available.

General Approach

- Describe combination of treatments that are appropriate and that are being contemplated and proposed.
- Describe co-ordination with licensees (including SBFEP) and other stakeholders.

Planned Management Activities (eligible activities listed on page 6)

- BC Parks Bark Beetle $$

Activity	Output (units)	Expenditure
Aerial overview survey*	ha	
Detailed aerial survey	ha	
Ground surveys	ha	
Photography	ha	
Fall & burn	# trees	
MSMA treatment	# trees	
Pheromones	# baits	
Trap trees	# trees	
Prescribed burn	ha	
Other (describe below)		
	Total	$

* aerial overview budget at FS Region

- Forest Service Bark Beetle $$

Activity	Output (units)	Expenditure
Aerial overview survey*	ha	
Detailed aerial survey	ha	
Ground surveys	ha	
Photography	ha	
Fall & burn	# trees	
MSMA treatment	# trees	
Pheromones	# baits	
Trap trees	# trees	
Harvesting	ha	
Other (describe below)		
	Total	$

* aerial overview budget at FS Region

Forest Health (General)

Management Objectives

- Summarize, from district management plans and discussions with MELP, licensees (including SBFEP) and other stakeholders, general management objectives regarding forest health objectives.

- State strategy (or mix of strategies) contemplated for forest district to assess and address forest health factors other than bark beetles.

Resource Values

- Brief qualitative description of resource values in forest district and how they could be affected by particular forest health factors other than bark beetles.

Planned Activities

- Briefly describe combination of activities that are being contemplated and proposed expenditure.

Proposed Activity	Expenditure

Total$ _____

_____ _____

Prepared By District Manager Approval

Guidelines for Bark Beetle Fund Expenditures

The following general guidelines should be followed in budgeting and spending funds in the bark beetle programme.

- treatments should address critical issues and should be of an emergency nature
- treatments should be co-ordinated within a logical planning unit; the plan and co-ordination should be evident in any submission(s)
- treatment plans should have inter-agency and stakeholder support
- sanitation activities take precedence over salvage (no salvage logging in parks or protected areas)
- treatments are for bark beetle control only; for the purposes of this programme, control includes:
  - aerial overview surveys, digital mapping (and necessary software), summaries and report production
  - detailed aerial surveys in priority areas
  - ground probes and recces
  - periodic large scale normal colour aerial photography
  - preparation of operational beetle management plans
  - pheromone purchase and placement
  - MSMA purchase and use
  - trap tree deployment and removal / treatment
  - single tree fall and burn
  - small scale sanitation (*e.g.* brood removal) harvesting - such as helicopter removal (except parks and protected areas)
  - Prescribed burns (limited in area) in parks and protected areas
  - other activities as approved by headquarters (in consultation with regions and MELP (Parks))
  - project management, monitoring and audit (Regions and Branch only)
- balsam bark beetle related activities limited to mapping only
- no road and /or bridge construction, reactivation or maintenance
- no research, operational or other trials, *etc.*, except as approved and specifically funded by the region (after consultation with headquarters and other regions and MELP (Parks)
- no capital purchases (misc. supplies are OK, but no ski doos, chain saws, *etc.*)
- no satellite imagery for the purpose of detection
- training costs specific to bark beetle programme are ok
- no FTEs or corporate overhead costs
- program and projects will be audited . documentation must be complete and accurate (for *e.g.*: number of treated trees and costs for F&B and trap trees, areas harvested due to bark beetle, areas mapped, *etc.*) and must include the information required in the Forest Service annual report

(Enter Management Unit Name)
Current Reforestation
For the 2001/02 Fiscal Year

Activities	Five-year Plan Goals (ha)					Annual Plan 2001/02		
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Planning/surveys/prescriptions	0	0	0	0	0	$0	$0	
2 Site preparation	0	0	0	0	0	0	0	
3 Planting	0	0	0	0	0	0	0	
4 Brushing	0	0	0	0	0	0	0	
5 Max. density spacing	0	0	0	0	0	0	0	
6 Studies	0	0	0	0	0	0	0	
7 Other	0	0	0	0	0	0	0	
Totals hectares	0	0	0	0	0	0	0	
Seedling purchase	0	0	0	0	0	0	0	
Total funding							0	

Priority is critical, high, moderate, low

Section 2.2

GUIDELINES FOR THE ENHANCING ENVIRONMENTAL VALUES COMPONENT

MAY 5, 2000

Prepared by
Ministry of Forests and
Ministry of Environment, Lands and Parks in Cooperation with
Forest Renewal BC

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GUIDELINES FOR THE DEVELOPMENT OF RESOURCE MANAGEMENT PLANS FOR ENHANCING ENVIRONMENTAL VALUES

1 Introduction

This document contains guidelines and procedures to assist Ministry of Forests and Ministry of Environment, Lands and Parks staff in preparing the Enhancing Environmental Values *component of Resource Management Plans (RMPs) for the Forest Renewal BC business-planning process. The Watershed Restoration Program is the primary program within this component.*

The Watershed Restoration Program (WRP) is in transition. Future investment by Forest Renewal BC will be targeted at restoring and protecting fish habitat and domestic water supplies in priority watersheds which have been damaged or are threatened by pre-Code forest development. All components of watershed restoration – *upslope, riparian, fish passage, and stream work* – required to restore or protect fish habitat and drinking water supplies will continue to be funded.

Any road, hillslope, or landing rehabilitation investments aimed at increasing forest productivity (e.g., ripping and planting landings, preventing landslide damage to existing plantations, rehabilitation of riparian areas) will be considered under the *Sustainable Harvest* component of Resource Management Plans. For more information, see pages 8, 13, 16, 17 and 21 of the 2001/02 RMP guidelines for this component.

A working draft of these *Enhancing Environmental Values* guidelines was used last year to identify regional benchmarks for priority key watersheds for future WRP investment. Significant progress was made for completing the regional benchmarks, especially considering constraints on both time and resources. Regional planning teams worked best when they functioned with clear terms of reference, ground rules and an agreed upon set of criteria for ranking watersheds and criteria for assessing the likelihood of successful restoration.

There are three products for this component of the RMP. The first two were initiated in 1999 and are nearing completion in most regions:

1. Completion of all the products for the regional benchmark (See Section 7.2).
2. Completion of a status report (See Section 8) on watersheds with existing projects.
3. Identification of priority research and intensive effectiveness evaluation needs in each region (See Section 9).

There have been a few revisions to the RMP guidelines based on feedback from the first year of implementation and a review of the current RMP products. Key changes/clarifications are noted below:

- Terminology for key watersheds has been clarified (see Figure 4).
- Category VI has been removed and Category IIB added (see Figure 9).
- The six step process has been clarified. Development of a regional basket of priority key watersheds involves six steps (see Figure 7). This requires regions first to identify key watersheds (through a ranking process) and then to estimate the likelihood of success (Categories I to V). The regional ranking of watersheds using an agreed upon set of criteria (i.e., Step 5) is an important step.
- Recommendations for participation and responsibilities have been made for each of the six steps involved in identifying priority key watersheds (see Table 1). Overall, the ministries are responsible for establishing an effective process and completing the products. Forest Renewal BC staff are responsible for establishing regional ground rules and monitoring the process and product to ensure it meets minimum requirements.
- The definition of transition watersheds has been clarified (see Figures 4 and 6).
- A status report on work within active watersheds has been made a requirement for September 30, 2000 (see Section 8). Last year it was optional.
- A new task – identification of priorities for research and intensive effectiveness evaluation – has been added to the RMP (see Section 9)
- The eligibility guidelines have been updated for fish passage (see Section B4 in Attachment B).

2 Focus and Strategies for Forest Renewal Investments 2000–2005

In the spring of 1998, Forest Renewal BC recognized the need to narrow the focus of WRP investments due to:

- declining funding levels in Forest Renewal BC overall;
- high demand for restoration work;
- feedback from earlier reviews and program implementers that greater focus was required to increase returns on investment; and
- Forest Renewal BC's corporate commitment to performance-based management, which involves the identification of performance measures to define success in each business area.

At their July 1998 meeting, Forest Renewal BC's Board of Directors recommended that future WRP investments be focused in the strategic area of ***enhancing environmental values***. Investments in road or landing rehabilitation to increase the land area for commercial timber production or to protect plantations from damage would only be considered if they proved more cost-effective for increasing long-term timber supply than other silviculture investments (e.g., fertilization, tree improvement). They also recommended further consultation with stakeholders to confirm this focus.

From July 15-22, 1998, Forest Renewal BC held one-day working sessions with WRP implementers and other stakeholders in all six FRBC regions to confirm the Board's direction for focusing the program. The feedback on key benefits and legacies from these consultations was consistent with the direction recommended by FRBC's Board of Directors. (See Figure 1).

Figure 1 Significant Legacies of WRP Investments

- Measurable improvements in watersheds (i.e., more fish habitat, fewer fish stocks at risk, stabilized stream channels and fewer slides) and further impacts from pre-code logging prevented.
- Accessible information for supporting ongoing management of watersheds and increased technical capacity to prevent and rehabilitate damage.
- Effective program monitoring and evaluation processes resulting in improved understanding of what works and what doesn't, with lessons learned incorporated into current practices.
- Improved community stewardship, increased public confidence in watershed management and greater partnership capacity.

The majority of session participants supported the program direction proposed by Forest Renewal (See Figure 2). They suggested increased specificity – define criteria for determination of key watersheds, clarify criteria for setting priorities, specify acceptable risk levels, etc., – to ensure a more focused program. Based on this, the Board's direction was finalized as follows:

Figure 2 Future Direction of WRP

- Focus to remain on pre-Code impacts.
- Protect, restore and maintain fisheries and water quality resources in priority key watersheds.
- Integrate processes (upslope, riparian, instream).
- Encourage new knowledge and learning on watershed processes and management, including increased accessibility of information to a range of stakeholders.
- Lever or cost-share with other initiatives to maximize benefits to fisheries/water quality.

Visions, Goals and Strategies – Watershed Restoration Program ~ 2000-2005

As part of its five-year strategy for Forest Renewal, the Board of Directors endorsed a Watershed Restoration Program focus on restoring and protecting fisheries and water quality in priority key watersheds across the province.

Vision

To speed recovery of fish habitat and water quality in priority key watersheds across the province which have been damaged or are seriously threatened by past forest development activities.

Goals

1. Restore and protect fish habitat and water quality in priority key watersheds adversely affected by forest harvesting practices that, without intervention, would require decades to recover naturally.

2. Provide better knowledge, information and tools to strengthen sustainable management of watersheds.

3. Provide community-based employment, training and stewardship opportunities.

Key Strategies

- Focus first on resource values – water quality for people and fish, and fish habitat.
- *Use a key watershed approach to increase benefits of investments.*
- Identify key watersheds in each region, which will guide program expenditures.
- Maintain an integrated, whole-watershed approach (upslope, riparian and stream) to identify priority threats and/or impacts to water quality and fish habitat.
- Encourage leveraging or cost-sharing with other initiatives to maximize investment and ensure coordination.
- Track and make new knowledge and learning on watershed processes and management accessible to all stakeholders and the general public.
- Increase accountability and improve monitoring and evaluation of cost-effectiveness.

Implications

- greater accountability to the original intent of the program and stakeholder expectations;
- greater clarity for joint planning and priority-setting;
- heavily impacted watersheds unlikely to be high priority; and
- selection of watersheds and priority work within watersheds now driven by two main factors: significance of watershed (high fisheries or domestic water values) *and* high chance of success for restoration.

3 Provincial Framework for WRP Planning and Priority-Setting

Completion of a provincial framework to focus planning and priority-setting based on a *key watershed approach* is essential to target investments effectively. The framework has three phases:

Phase 1: Regional Priority Setting
Identification of Priority Key Watersheds by Region
Description of a procedure for identifying and ranking key watersheds to be considered for restoration in a region.

Phase 2: Selecting Target Watersheds
Development of a Regional-Level Strategy for Completing 20% of the Priority Key Watersheds (This phase is part of the Forest Renewal Investment Planning Process.)
Description of the identification of target watersheds and the development of a regional-level strategy for proceeding with restoration of the targeted watersheds (i.e., selecting which *watersheds to do* when *in order to best meet Forest Renewal targets and performance measures).*

Phase 3: Watershed-Level Planning
Identifying priorities within Target Watersheds and Preparing Restoration Plans
Description of a procedure for: selecting those subbasins within target watersheds that have a high likelihood of restoration success; identifying those watershed components that are most critical to restore for fish and domestic water values; and establishing a priority list for works within those components.

The key watershed approach allows various agencies and programs to focus professional and fiscal resources strategically where common priorities exist and to gain the maximum water quality and fish habitat benefit from each dollar spent. It recognizes that we cannot treat every watershed in the province that has experienced some impact from forestry. It also advocates that it is more efficient to target regionally significant watersheds and assess where there is the highest likelihood of restoration success, rather than dispersing effort on all watersheds that have experienced an impact from forestry. This approach will enable Forest Renewal BC to work toward its goal of restoring 20% of the priority key watersheds over the next five years. It also allows for protection and restoration of watersheds on a priority basis.

A schematic of the process appears in Figure 3 on the next page. Key definitions and concepts are noted on page 10.

Figure 3 Planning and Priority Setting Model for Watershed Restoration Program

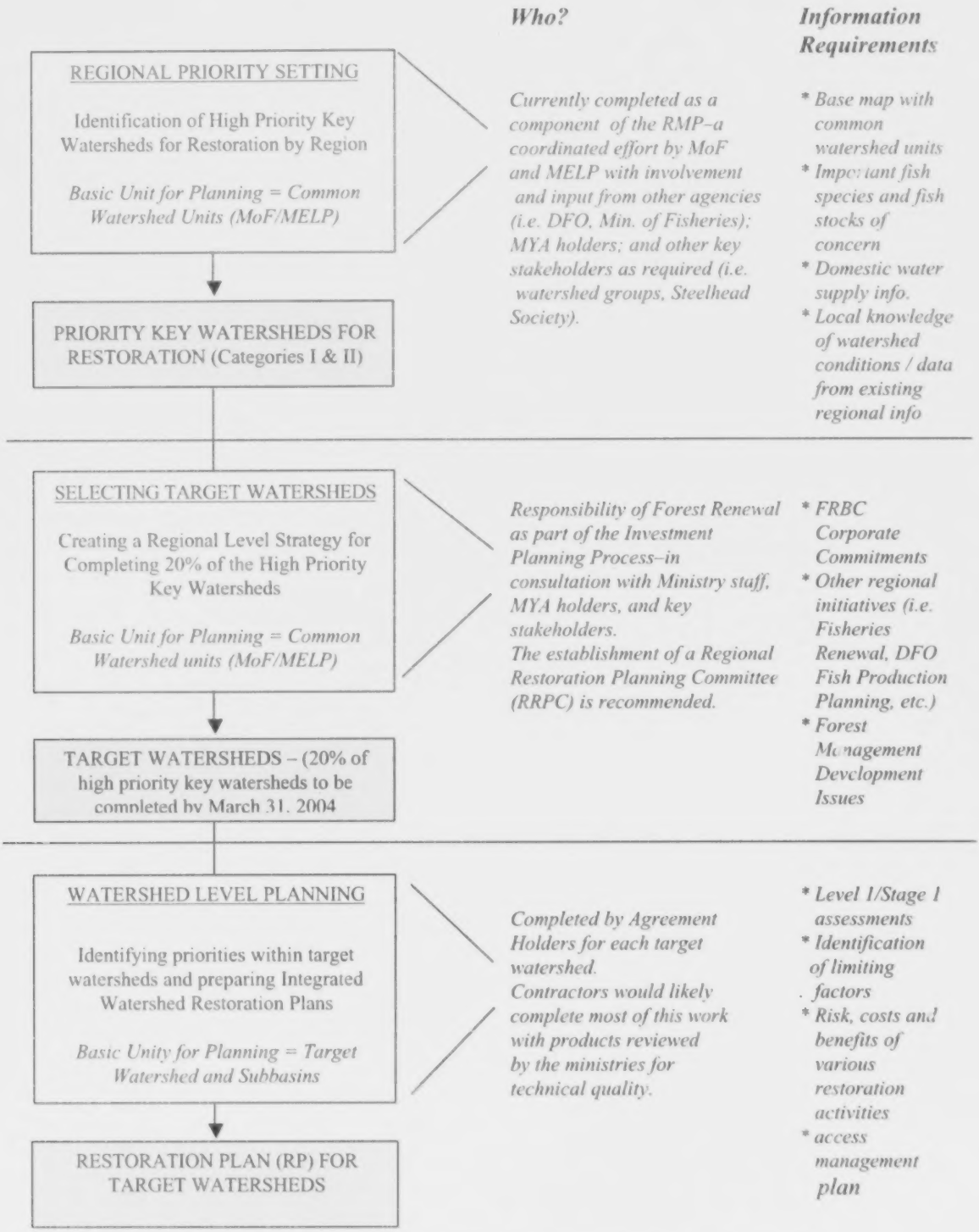

Who?
Information Requirements
REGIONAL PRIORITY SETTING
Identification of High Priority Key Watersheds for Restoration by Region
Basic Unit for Planning = Common Watershed Units (MoF/MELP)
Currently completed as a component of the RMP–a coordinated effort by MoF and MELP with involvement and input from other agencies (i.e. DFO, Min. of Fisheries); MYA holders; and other key stakeholders as required (i.e. watershed groups, Steelhead Society).
* Base map with common watershed units
* Important fish species and fish stocks of concern
* Domestic water supply info.
* Local knowledge of watershed conditions / data from existing regional info
PRIORITY KEY WATERSHEDS FOR RESTORATION (Categories I & II)
SELECTING TARGET WATERSHEDS
Creating a Regional Level Strategy for Completing 20% of the High Priority Key Watersheds
Basic Unit for Planning = Common Watershed units (MoF/MELP)
Responsibility of Forest Renewal as part of the Investment Planning Process–in consultation with Ministry staff, MYA holders, and key stakeholders.
The establishment of a Regional Restoration Planning Committee (RRPC) is recommended.
* FRBC Corporate Commitments
* Other regional initiatives (i.e. Fisheries Renewal, DFO Fish Production Planning, etc.)
* Forest Management Development Issues
TARGET WATERSHEDS – (20% of high priority key watersheds to be completed by March 31, 2004
WATERSHED LEVEL PLANNING
Identifying priorities within target watersheds and preparing Integrated Watershed Restoration Plans
Basic Unity for Planning = Target Watershed and Subbasins
Completed by Agreement Holders for each target watershed.
Contractors would likely complete most of this work with products reviewed by the ministries for technical quality.
* Level 1/Stage 1 assessments
* Identification of limiting factors
* Risk, costs and benefits of various restoration activities
* access management plan
RESTORATION PLAN (RP) FOR TARGET WATERSHEDS

Figure 4 Watersheds – Key Definitions and Concepts

What are *watershed units*?

Watershed units are major watershed boundaries agreed to jointly by MoF and MELP and identified on a base map for each Forest Renewal region (usually 3rd to 5th order streams averaging 30,000 ha, but ranging from 10,000 to 50,000 ha-coast to 500,000 ha-dry interior).

What are ***Key Watersheds*** for Forest Renewal investment?

Key watersheds are those regionally significant watersheds that contain *high or very high* values of targeted fish species/stock or are important domestic water supply sources. As a general guide, no more than 25% of the watersheds in a region should be identified as key watersheds.

What are ***Priority Key Watersheds*** for Forest Renewal investment?

Priority Key Watersheds (Categories I and II) are those that:

- have been ranked as very high or high fish and/or water values – i.e., those containing stocks of regionally significant fish species and/or are community watersheds or significant domestic watersheds
- have known impacts from pre-Code forestry, and
- have been estimated to have a high likelihood of restoration success.

What are Target Watersheds?

Forest Renewal has a five-year target of completing restoration in 20% of the priority key watersheds within each region. These are the priority key watersheds targeted for completion by March 31, 2004 – i.e., the target watersheds.

What are Transition Watersheds?

In the past, restoration work has been implemented in watersheds that are not now identified as priority key watersheds. These are termed transition watersheds for Forest Renewal investment.

4 Linkages with Other Initiatives and Objectives

Planning and priority setting for WRP should consider related forestry and fishery conservation and management initiatives. Several areas for consideration are noted here.

Information from Other Forest Management Planning and Work on the Landscape

Regional priority setting should consider information from strategic level plans (e.g. regional plans, LRMPs), Higher Level Plans, TSR Rationales, Tenure Management plans or any existing inventory or research documentation pertaining to the specific area.

Sources of information of fish distribution and water licences include: 1:20,000 reconnaissance inventories (RIC); accumulated data from FPC fish–stream inventories performed by licensees; and existing information such as FISS database and BC Hydro fish inventories.

Other information may be gained through a local-level set of roundtable discussions involving FRBC, the Province (represented by the Ministry of Forests and Ministry of Environment, Lands, and Parks), DFO, licensees, First Nations groups, and other stakeholders as deemed necessary.

Sustainable Harvest and Strengthening Sustainable Forest Management Objectives

Road, landing, hillslope or riparian rehabilitation activities aimed at increasing forest productivity (e.g., ripping and planting landings, preventing landslide damage to existing plantations) are considered under the *Sustainable Harvest* (SH) component of Resource Management Plans. Pages 8, 13, 16, 17 and 21 of the SH RMP guidelines provide more information on SH priorities and funding criteria.

As part of the RMP process for *Strengthening Sustainable Forest Management* (SSFM), knowledge gaps to support strategic decisions (e.g., land use planning implementation or timber supply reviews) will be identified in relation to priority sustainable forest management issues in each region. The regional SSFM planning team will also consider whether any identified knowledge gaps support strategic investment for Forest Renewal BC's other objectives
(e.g., SH, EEV).

Stock Management Strategies

Priority setting for watershed restoration should include consideration of the presence or absence of stock management strategies where they exist. To fully secure the intended benefits of WRP investments, ideally there should be:

- A fisheries stock management strategy or protocol in place that is conducive to the achievement of restoration objectives (i.e., stocks are managed in consumptive/ commercial fisheries to ensure adequate escapements) and/or
- An annual catch and escapement-monitoring program of the fish stock(s) is occurring.

However, the presence of a stock management strategies is not a requirement for investment since they are not in place for many watersheds.

5 Performance Measures and Targets for WRP 2000~2005

The performance measures in relation to the vision, goals and strategies of Forest Renewal's strategic objective of **enhancing environmental values** are:

- to speed the recovery of priority key watersheds in each region which have been damaged or seriously threatened by past forest development activities;
- to ensure investments are evaluated in relation to the restoration goals of the key watersheds (i.e. key limiting factors); and
- to maintain or increase in community-based stewardship capacity.

Forest Renewal has a five-year target of completing restoration in 20% of the priority key watersheds within each region. These are the priority key watersheds targeted for completion by March 31, 2004 – i.e., the target watersheds. This target is based on a status report from the ministries in July 1998 and current funding levels for WRP investment (approximately $45 million annually). After completing the 2001/02 RMP work, it will be evident if the target is reasonable or not.

How is Forest Renewal defining "completion"?

For the purpose of tracking performance and deciding when the majority of funds should be shifted out of a watershed unit, Forest Renewal is proposing that completion be defined when the high-priority major works identified in *Restoration Plans* are implemented and completed according to standards.

This does not mean that all investment in the watershed unit ends. Maintenance and routine (and in some cases more intensive) evaluation will continue beyond the major works phase. All restoration works should get some routine monitoring for one or two years.

Five years after completion of all high-priority works, it is proposed that a brief status report on watershed health be provided by qualified professionals doing the routine evaluations. The report will provide an interdisciplinary evaluation on the state of recovery of the subbasin, and on the effectiveness of restoration.

6 Overview of Resource Management Planning

Guidelines for completing the three main tasks for 2001/02 Resource Management Planning are outlined in sections 7 to 9:

Section 7	Guidelines for completing the regional benchmark of priority key watersheds. This work was initiated in 1999. There is some fine-tuning to complete this product by September 30, 2000.
Section 8	Requirements for a status report on all watersheds where there is existing work. This information will be used to guide transition and the selection of target watersheds. Most regions began this work last year.
Section 9	Identification and Priority Setting for Research and *Intensive* Effectiveness Evaluations

Expectations for the WRP component of the process and product are included in each section.

7 Regional Benchmark of Priority Key Watersheds

7.1 Identification of Priority Key Watersheds

This section outlines a rationale and process for identifying and ranking key watersheds in each region using existing data, local knowledge and professional judgement. Over time, as new information becomes available, it is expected that this benchmark will be updated.

The product – a regional benchmark of priority key watersheds for restoration – will be used to guide expenditures over the next five years, to select target watersheds and to monitor and report on regional investments against the performance target (i.e., 20% of the priority key watersheds in each region).

Six steps are recommended for identifying and ranking watersheds at a regional level:

1. Identify fish species and/or special stocks of concern in each region.
2. Create a base map showing watershed units for the region.
3. Select watersheds that are important producers or conservation streams for the identified target species and/or stocks.
4. Identify domestic water supply watersheds.
5. Rank the watersheds (Very High, High, or Medium) according to domestic water supply or fisheries values and create a list of key watersheds.

6. Identify the priority key watersheds for Forest Renewal investment by estimating the impact from past forest development and potential for restoration for each of the ranked watersheds.

Guidelines for completing these steps are covered in Attachment A. At the end of the process, each region will have created a list of key watersheds, and determined which are the best candidates for restoration, i.e.,

- high- to very-high values for fish and/or domestic water supply;
- damaged or potentially threatened by pre-Code forest development; and
- high chance of success.

7.2 Expectations for Process and Product related to Regional Priority Setting

Process – Minimum Requirements for Regional Benchmark

- One WRP plan for each region should be developed based on regional identification and ranking of watersheds (i.e., not district by district).

- The WRP plan should be developed jointly by MoF and MELP, with DFO as a member of the regional planning team.

- Involvement of partner group and technical consultations should be carried out as stipulated in the regional Forest Renewal Ground Rules and at a minimum should include input from Agreement Holders, as well as key stakeholders and other stewardship agencies/organizations.

- The regional planning team identifies and considers related initiatives (see section 4).

Process Recommendations

In order to identify the high priority key watersheds for a region, it is critical that this regional priority setting be completed as a joint exercise. Table 1 summarizes recommendations for process and product for the various tasks. It is recommended that Agreement Holders be involved early in the process.

Product –Minimum Requirements for Regional Benchmark

The RMP (for WRP) to be submitted to the FRBC Regional Directors by September 30, 2000 must include:

- A hard copy (as well as a GIS version) of the base map. The base map should be a regional map of watershed units, which clearly identifies a) transition watersheds and b) key watersheds designated into categories I – V.
- The regional list of criteria (agreed to in advance by the regional planning group) that is used to derive the relative ranking of watersheds and make a determination of 'key' watersheds.
- The rationale used to designate categories (I – V).
- A summary of the regional priority setting product as per Table 2 on page 18.

Table 1: Regional Benchmark – Expectations for Product and Process

Tasks	Process Recommendations	Expectations/products Documentation of rationale
1. Confirm technical team, process and products in each region.	▯ At a minimum, MoF, MELP and DFO should be involved in the technical team. ▯ Consult with regional director, Forest Renewal with respect to regional expectations for process, key stakeholders and product timelines.	▯ Local agreement documenting who is responsible for what in each region. ▯ Description of regional process/product to finalize the regional benchmark by September.
2. Identify fish species and/or special stocks of concern in each region.	▯ Recommend that MELP lead this task. ▯ Include DFO/MoF, others as appropriate.	▯ Regional criteria for identifying target fish species and/or stocks of concern. ▯ List of target fish species for region and rationale for selection.
3. Base map of major watersheds in region.	▯ Recommend that MELP lead this task ▯ Must be joint MoF/MELP agreement on units	▯ Map - scale; GIS based & linked to a database/spreadsheet; Atlas @ 1:50k of eligible watersheds (mutually agreed to by MoF/MELP, based on w/s bdrys as much as possible).
4. Select watersheds that are important producers/ conservers for the identified target species/stocks.	▯ Recommend that MELP lead this task. ▯ Include DFO/MoF, others as appropriate.	▯ Map/dbase updated to identify w/s with target species/stocks –fisheries values.
5. Select watersheds that are important for domestic water supplies.	▯ Recommend that MELP lead this task.	▯ Map/dbase to identify w/s with domestic watershed values.

6. Rank the watersheds (Very High, High, or Medium) according to domestic water supply and fisheries values and create a list of key watersheds.	Recommend that this task be accomplished through an advisory process which solicits input from MELP, MoF, DFO, licensees, MFisheries and other key stakeholders.	Rationale for ranking the list of watersheds. Updated map & database with ranking for watersheds (VH, H etc).
7. Identify the priority key watersheds for Forest Renewal investment by estimating the status of impact and potential for restoration for each of the ranked watersheds.	Recommend that MoF lead this task. It involves coordination of input from MoF and MELP staff at the regional and district levels. Regional FRBC coordinators from MoF and MELP would provide districts with lists of key watersheds from the VH and H groups. Watersheds would be categorized (Category I to V) through a district level process involving input from stakeholders by watershed. This task, in particular, requires a combination of technical expertise and stakeholder participation/local knowledge, thereby ensuring greater buy-in and implementation at the planning tables. Districts would provide recommendations on watershed categorization back to the regional team. The regional team would be responsible for finalizing a list of priority key watersheds for the region.	Updated map & database with probability for success added. Provide rationale for categorization. List of high priority key watersheds for WRP funding (category I watersheds ranked as very high or high for fish and water-supply values). And/or Category II watersheds rated as VH or H where there is a co-ordinated restoration plan with other funding agencies.
8. One day review of regional products with the RMP-WRP Team.	Lead by MoF and MELP.	Regional MoF/MELP staff will present regional criteria, rationale and products to regional, provincial agency staff, Agreement Holders and key stakeholders.

Table 2: Summary of Regional Priority Setting Product

WU Breakdown	**(#)**
All watershed units with some pre-Code forest harvesting	
- Number of watershed units which are important producers/conservers for targeted fish species/stocks or domestic water supply	
- Number of key watersheds (i.e. VH, H values for fish/water values)	
- Category I key watersheds	
- Category II key watersheds	
- Category IIB key watersheds	
- Category III key watersheds	
- Category IV key watersheds	
- Category V key watersheds	
- Number of priority key watersheds	

8 Status Report

For All Watershed Units

Table 3a should be completed for each watershed unit in the district. In the past, restoration work has also been implemented in watersheds that are not priority key watersheds (i.e. categories I and II). These are termed ***transition watersheds***. Transition watersheds are those that are *not* key watersheds as well as priority key watersheds ranked in categories IIB, III, IV and V (See Figure 6). More detailed information on transition – watersheds, eligible work and timetable for transition – is provided in section 11.

For All Watershed Units -Where there is work completed, underway or planned

At a minimum, the status data shown in Table 3b should be recorded. In 1999/2000, an MSAccess database of WRP projects (1994-1999) was completed which may be helpful in completing this status report. This database is available from Brendan Holden (387-6565).

Table 3. Minimum Data Requirements for Watershed Units

3a) All Watershed Units

MoF District	Watershed Unit	Regional priority for domestic water supply (VH, H, M)	Regional priority for fish (VH, H, M)	Key watershed for region[1] (Y/N)	(Categories I-V) Likelihood of Success	MYA # (for Ws units with active projects)	Name(s) of implementing partners[2]	Transition Watershed[3] (Y/N)

3b) Watershed Units with Existing Projects

For all WS Units with existing projects (may be expanded as per local preference)													
Watershed Unit	Watershed Number	Transition Watershed (Y/N)	Subbasins Within WU	Overview Assessment			Prescriptions			Major Works			Effectiveness Evaluation
				Upslope	Riparian	In-Stream	Upslope	Riparian	In-Stream	Upslope	Riparian	In-Stream	
Blueberry		Y	Alpha	(P,O,C)[4]	(P,O,C)	(P,O,C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)
		Y	Beta	(P,O,C)	(P,O,C)	(P,O,C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)	(P, O, C)

[1] ***Key*** watersheds are those regionally significant watersheds that are ranked ***high or very high*** for fish or drinking water values (see Figure 4).

[2] Current partnership information is important for planning transition.

[3] These are watersheds units –with active projects- that are not category II or I (with a co-ordinated plan). Eligible work in these watersheds (see Sec 11) should be completed by March 31, 2001.

[4] Planned, Ongoing, Completed

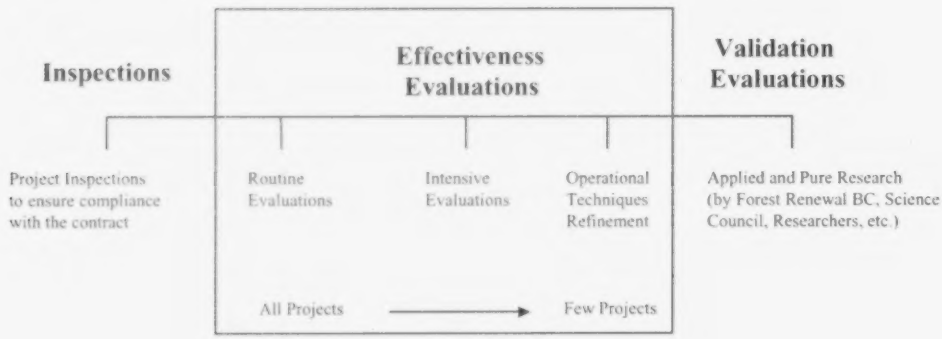
9 Resource Management Planning – Priorities for Research and Effectiveness Evaluation

An optional task for the RMP product for September 30, 2000 is to identify priority needs for research and *intensive effectiveness evaluation and operational technique refinement.*

9.1 Background

In 1999, MoF and MELP completed a framework for effectiveness evaluation of WRP investments. Figure 5 shows how effectiveness evaluations relate to inspections (i.e., compliance monitoring) and research (i.e., validation evaluations).

Figure 5 Inspections and evaluations associated with the Watershed Restoration Program.



Inspections – to ensure work is conducted according to standards or contract specifications – have been standard practice since 1994. Research has also been funded since 1994 through Forest Renewal BC's Research Program.

There has been less emphasis, however, on effectiveness evaluation which is designed to answer three kinds of questions:

1. Is the restoration work achieving the objectives for the targeted resource values?
2. How can the watershed restoration techniques be improved to optimize recovery of the targeted resource values?
3. What modifications would improve the cost-effectiveness of the work?

Effectiveness evaluations can range from a relatively low intensity level or *routine* evaluations to *intensive* evaluations and to *operational techniques refinement.* An overview of these three types is presented below. For more information, see Technical Circular #12: *A Framework for Effectiveness Evaluation of Watershed Restoration Projects.*

Routine evaluations range from a visual evaluation using qualitative variables conducted on all structures and treatments, to a largely quantitative assessment that is conducted on the ground at high priority sites within a project. The purpose of routine evaluations is to look for any obvious failures at all study sites within a watershed using very basic field procedures. All restoration projects should get some routine monitoring for one to two years.

Intensive evaluations are appropriate for select projects or select subsets of sites that will provide an opportunity to quantitatively examine the impacts of rehabilitation treatments in more detail than is possible with routine evaluations. Intensive evaluations rely primarily on direct measures of biological and physical parameters, rather than response indicators.

Operational techniques refinement is a special category of effectiveness evaluations that requires control and manipulation of restoration treatments in order to answer the questions: did a new treatment work, how well did it work relative to other treatments, and at what cost did it work?

In the effectiveness evaluation framework, MoF and MELP suggested that effectiveness evaluations be approximately 6% of the annual WRP budget. They suggested the following breakdown:

Routine evaluations	4%
Intensive evaluations	1%
Operational techniques refinement	1%

Over the past five years, approximately $1.8 million has been spent on research related to watershed restoration. In 2000, Chris Ormer, the Manager for Forest Renewal's Research Program will be conducting a needs assessment of research and extension to support future WRP investments.

9.2 Expectations for Product

- A prioritized list of needs for research and intensive effectiveness evaluation (including operational techniques refinement) for the region.
- A brief rationale for the need which includes the following information:
  - Potential benefits (e.g., improvements in treatments or decision making, impacts on costs, and environmental values),
  - The degree to which the results can be extrapolated within and between regions.

10 Update on Eligibility

WRP activities may include mitigation work on roads, trails, hillslopes, landslides, gullies, bridges, culverts, and drainage channels, riparian reserves and stream channels to improve fish habitat. Forest Renewal BC funds mitigation work for problems which are incremental to those which would have been caused by constructing roads and trails faithfully according to the standards of the day. This work is over and above the normal obligations of MoF or licensees. In short, FRBC spending is meant to add to – not substitute for – expenditures made by governments and industry in the course of developing forest land.

Activities in Transition Watersheds

See Section 8, page 18.

Effect of The Forest Practices Code on Eligibility for Road-Related Activities

The *Forest Practices Code of BC Act* came into effect on June 15, 1995. This means that all new road permits issued on or after that date carry defined responsibilities with respect to construction, maintenance, deactivation and rehabilitation. In certain cases, some of this post-Code work may be eligible for funding under WRP. This does not relieve the tenure holder of the responsibility to perform the work whether or not funding is approved under WRP. Guidelines listing the eligible activities for different road types (e.g., non-status, FSR, permit) are outlined in Attachment B. **Agreement Holders are responsible for determining if a road is eligible or not.**

Activities on Private Land

Work on private land *is not eligible* for funding under WRP, except for exceptional cases which require the specific approval of Forest Renewal BC. This rule includes Schedule A land within tree farm licences and the private portions of woodlot licences.

Funding Eligibility for Fish Passage Restoration

Forest Renewal will fund fish passage restoration on a case-by-case basis for non-status roads and permitted for FSR roads built prior to June 1995. For more details, see Section B4 in Attachment B.

11 Transition 1999-2002

Timetable for Transition

1999/2000

- Commence the phase out of WRP investments targeted at providing access to timber (e.g., by lowering road density or completing WAPS) in the short-term. All these investments were to be phased out by March 31, 2000.

- Include all road and landing rehabilitation activities aimed at increasing forest land area in the Sustainable Harvest component priority-setting process.

- Target new WRP investment to the protection and restoration of fisheries and water quality in priority key watersheds. All new projects should be consistent with the corporate strategy for WRP.

- Develop a regional benchmark to monitor WRP investments over the next five years. This benchmark will be based on the environmental objectives of protecting and restoring fish habitat and water quality in priority key watersheds in each region.

2000/01

- Complete the phase out of work in transition watersheds by March 31, 2001.

- Any activities where the primary purpose is to protect second growth stands and thereby long-term timber supply are to be included in the Sustainable Harvest component priority-setting process.

- Target more than 70% of the regional WRP allocation to priority key watersheds.

2001/02

- Target more than 90% of regional WRP investments to the protection and restoration of fisheries and aquatic resource values in priority key watersheds targeted for the next 5 years.

- ***Why not 100%?*** *It is anticipated that some one-off emergency situations (e.g., where stock levels are critical, or for safety) may be approved even though they are outside the priority key watersheds targeted for completion over the next 5 years.*

Investments in Transition Watersheds

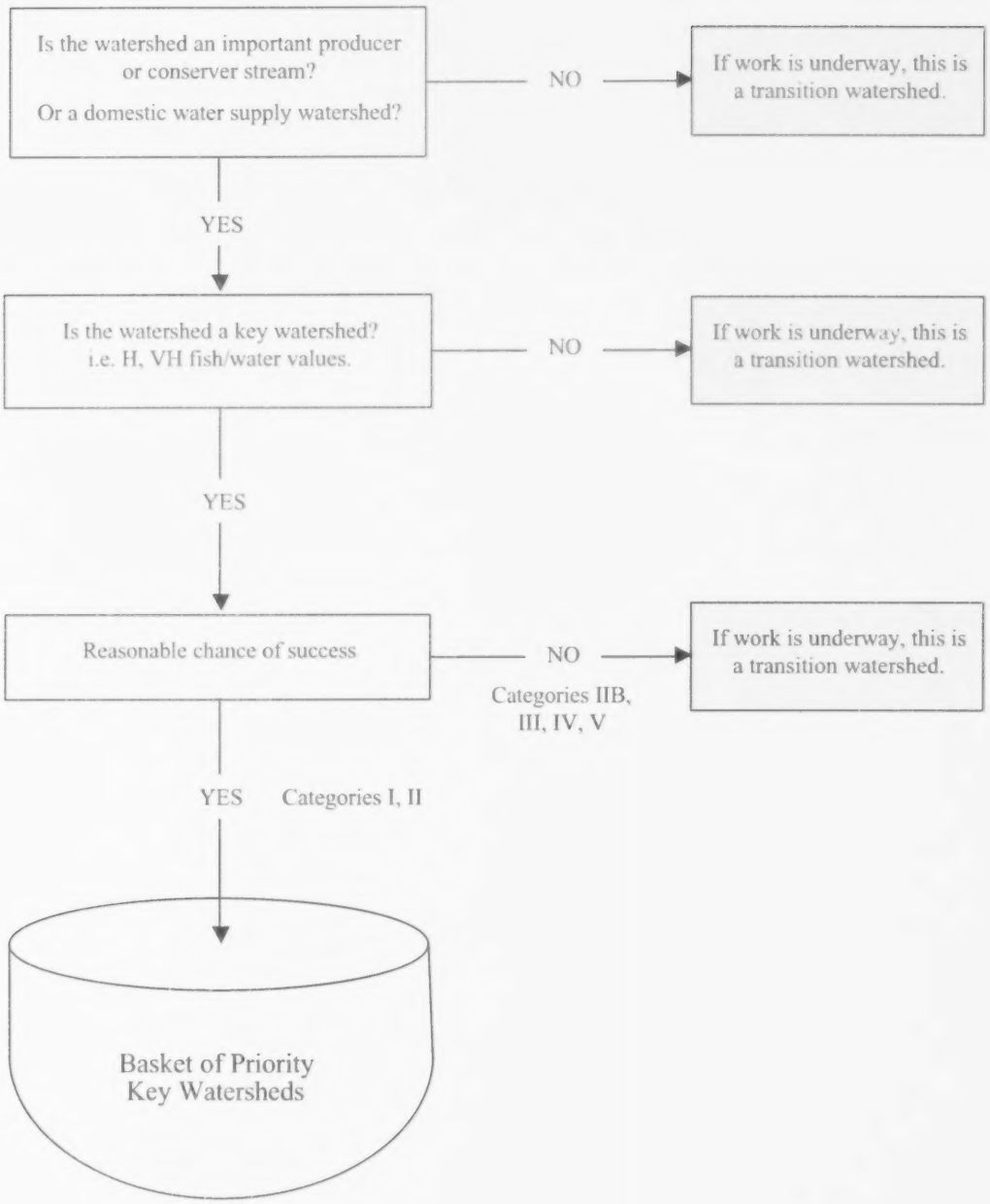
In the past, restoration work has also been implemented in watersheds that are not now identified as priority key watersheds. There are termed ***transition watersheds***. These watersheds have ongoing restoration activity that will provide secondary benefits by completing the projects over the next two years. Transition watersheds are those that are *not* key watersheds or priority key watersheds (see Figure 6 on the next page).

Only work which is *on strategy* (i.e., focused on protecting and restoring fish habitat and/or domestic water supplies in priority key watersheds) will be eligible for WRP funding, except:

1. Where work is needed to stabilize upslope or stream projects *which have been partially implemented*. This exception is limited to the transition period ending March 31, 2001. Work is eligible if public health or safety is in immediate danger *or* there is a high probability of an event which will directly or indirectly cause significant environmental damage to water quality or fish habitat *if the site is not stabilized*.
2. Where work is needed to complete an effectiveness evaluation project.
3. For any new WRP works supported by both Agreement Holders and agencies, and deemed necessary by the FRBC Regional Director to protect existing investment or partnerships.

Planned WRP work for 2001/2002 and beyond which does not meet the above principles will be ineligible for funding.

Figure 6 Transition Watershed Flowchart


Is the watershed an important producer or conserver stream?
Or a domestic water supply watershed?
NO
If work is underway, this is a transition watershed.
YES
Is the watershed a key watershed? i.e. H, VH fish/water values.
NO
If work is underway, this is a transition watershed.
YES
Reasonable chance of success
NO
Categories IIB, III, IV, V
If work is underway, this is a transition watershed.
YES
Categories I, II
Basket of Priority Key Watersheds

ATTACHMENT A

Guidelines for Identifying and Ranking Key Watersheds in Each Region

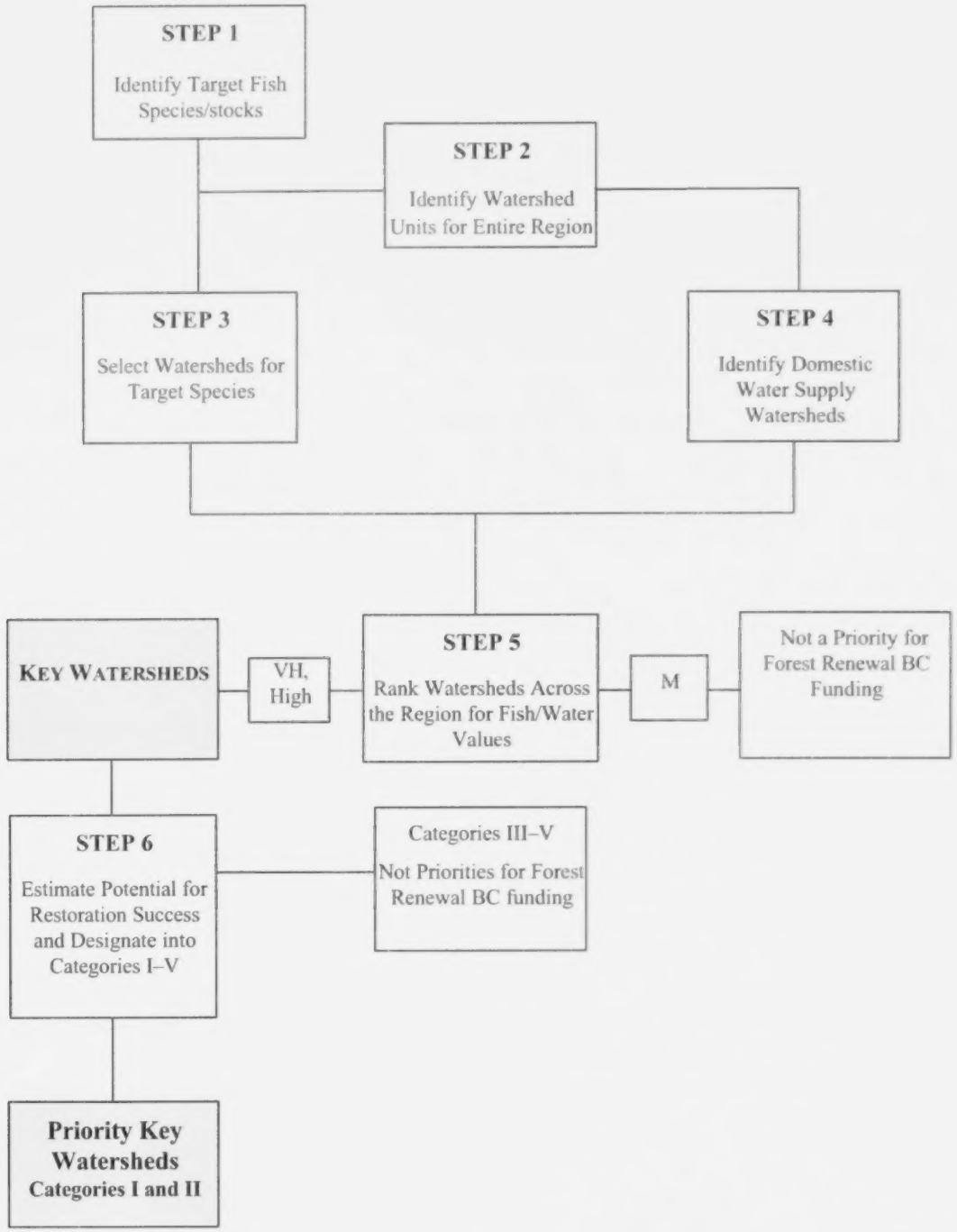
Six steps are recommended for designation of priority key watersheds at a regional level. These steps are summarized below and in Figure 7 on the next page. Detailed activities for each step follow.

1. Identify fish species and or special stocks of concern in each region.
2. Create a base map showing watershed units for the region.
3. Select watersheds that are important producer or conservation streams for the identified target species and/or stocks.
4. Identify domestic water-supply watersheds.
5. Rank the watersheds (Very High, High or Medium) according to domestic water supply or fisheries values and create a list of key watersheds.
6. Identify the priority key watersheds for Forest Renewal investment by estimating the impact from past forest development and potential for restoration for each of the ranked watersheds.

At the end of this process, each region will have created a list of key watersheds and determined which are candidates for restoration due to an expected high return on investment.

Priority key watersheds for Forest Renewal investment are Categories I and II (where there is a coordinated restoration plan in place).

Figure 7 Identification of Key Priority Watershed for Forest Renewal Investment


STEP 1
Identify Target Fish Species/stocks
STEP 2
Identify Watershed Units for Entire Region
STEP 3
Select Watersheds for Target Species
STEP 4
Identify Domestic Water Supply Watersheds
KEY WATERSHEDS
VH, High
STEP 5
Rank Watersheds Across the Region for Fish/Water Values
M
Not a Priority for Forest Renewal BC Funding
STEP 6
Estimate Potential for Restoration Success and Designate into Categories I–V
Categories III–V
Not Priorities for Forest Renewal BC funding
Priority Key Watersheds
Categories I and II

Step 1: Identify fish species and or special stocks of concern in each region.

Fish species or stocks of concern can include those that are:

- threatened or endangered wild stocks;
- unique (e.g., summer steelhead or bull trout); and
- at or below conservation levels and are First Nations fisheries, or associated with a high level of commercial and/or recreational use.

For example, the Vancouver Region may identify as their target species: Summer and Winter Steelhead, Coho and Chinook.

Step 2: Create a base map showing watershed units for the region.

Guidelines and procedures for watershed designation that have been effective for identifying fishery watersheds are:

- use of small-scale topographic maps (e.g., a 1:250,000 plot derived from the 1:50,000 *BC Environment Watershed Atlas*) to determine the major watershed boundaries in the region;
- initially stratify 6th order, then 5th order, then 4th order watersheds;
- watersheds should be no smaller than 30,000 ha and no larger than 75,000 ha (dry Interior) or 10,000 to 50,000 ha (Coast) to maintain economies of scale. Watershed size is more important than stream order;
- smaller watersheds, comprised of 1st and 2nd and some 3rd order streams and face units, are grouped as residual units which fall into the same size categories as above;
- smaller watersheds that contain known unique or endangered stocks may be designated as watersheds regardless of the watershed area. These watersheds may also lie within a larger watershed and need to be separately delineated; and
- larger mainstem residuals may need to be segregated into units which fit the size categories above. Where subdivision of larger units is needed, use administrative boundaries (mainly licensee operating areas) as a guide.

Forest Renewal funding is restricted to watersheds that have been or potentially will be damaged by pre-Code forest development. Some regions may have large areas which were not harvested prior to the Code. These areas do not need to be included in the base map.

Note: Watershed units should be large enough to include subbasins which impact or threaten the fish or water values of interest. For example, in the Tulameen system the highest fish habitat values are in the mainstem, but the greatest impacts to this habitat is the sediment from tributaries like Lawless Creek which are not going to be considered as having high fish or drinking water values in themselves.

STEP 3: Select watersheds that are important producer or conservation streams for the identified target species and or stocks.

Identify which of the watersheds demarcated in Step 2 are important streams for the target species identified in Step 1. Important streams are usually significant producers for commercial or recreational stocks of the targeted species or are known important habitats for conservation of the species. *This is not a ranking exercise at this point.* Information can be gathered from sources within the Ministry of Environment, Lands and Parks and from DFO. Detailed information can be provided by district habitat protection staff and fisheries staff and by DFO habitat restoration biologists. Further information is available in reports and databases. In some regions, this list of high-value fish streams has already been identified as part of regional planning for watershed assessment procedures or from other regional processes such as LRMP's, CORE plans or the Protected Areas Strategy.

STEP 4: Identify domestic water supply watersheds.

Watersheds to be considered include:

- Forest Practices Code community watersheds;
- significant domestic water-supply watersheds (>15 licences); and
- other domestic water-supply watersheds.

STEP 5: Rank the watershed (Very High, High or Medium) according to domestic water supply or fisheries values and create a list of key watersheds.

Each region should discuss and rank watersheds using whatever method makes sense for that region. A roundtable of stakeholders (proponents; the Ministry of Environment, Lands and Parks; Ministry of Forests; Department of Fisheries and Oceans, and other restoration-related groups) could take on this task. This would allow for variations to suit local conditions and foster greater buy-in at the regional level. For example, it may be appropriate to list and rank watersheds separately for each target fish species. Then, when ranking all the watersheds in the region, stakeholders will consider the relative regional significance of the various target species as well as the relative importance of the watershed to the maintenance and productivity of target species.

Watershed ranking should also include consideration of the presence or absence of stock management strategies. To fully secure the intended benefits of WRP investments, there should be:

- A fisheries stock management strategy or protocol in place that is conducive to the achievement of restoration objectives (i.e. stocks are managed in consumptive/commercial fisheries to ensure adequate escapements) and/or
- An annual catch and escapement monitoring program of the fish stock (s) is occurring.

High and very-high ranked watersheds are designated as *key watersheds*. Example criteria for ranking are shown in Figure 8. As a general guide, no more than 25% of the watersheds in a region should be identified as key watersheds.

Figure 8 Example Criteria for Ranking Watersheds

Fish Watersheds
Very High (VH) – contain endangered, threatened or unique species or stocks, or contain high-value stocks of two or more targeted species or stocks with conservation concerns *and* a Fisheries Stock Management Plan in place that is conducive to the achievement of restoration objectives.
High (H) – contain high-value stocks of one species or stocks with conservation concerns and a Fisheries Stock Management Plan in place.
Medium (M) – contain one or more high-value stocks, but there is no Fisheries Stock Management Plan in place.

Domestic Watersheds
VH – Forest Practices Code community watersheds.
H – significant domestic water-supply watersheds (>15 licences).
M – other domestic water-supply watersheds.

STEP 6: Identify the priority key watersheds for Forest Renewal investment by estimating the impact from past forest development and potential for restoration for each of the ranked watersheds.

In regions where local knowledge of watershed conditions is good, it may be possible to develop a preliminary assessment of watershed conditions using regional experts and stakeholders in a roundtable process. In other areas, however, where the degree of local knowledge about forestry land use in watersheds is less detailed, it may be necessary to collect regional data to assist with the watershed classification. Possible tools to assist with this include:

- *Watershed Condition Atlas* from the Ministry of Environment, Lands and Parks (this may provide general indications of the extent of logging in a watershed, along with other measures of development);
- District-wide overview Watershed Assessments, conducted largely by mid-scale air-photo interpretation (e.g., 1:40,000 air photos);
- Watershed Assessments that have been completed for FPC purposes;
- Watershed Overview and Level 1 Assessments that have been completed for a WRP purpose;
- knowledge of other land-use impacts (agriculture, etc.);

- future forest development plans for a watershed; and
- future land-use plans.

The objective is to categorize the watershed using existing knowledge into one of the categories shown in Figure 9 on the next page.

In developing a priority list for watershed restoration, the focus should be on Category I watersheds and on Category II watersheds where there is a coordinated restoration plan in cooperation with other funding agencies. This list of priority key watersheds is the *basket* of watersheds from which ***target watersheds*** are selected (in Phase 2 of WRP).

In the past, restoration work has also been implemented in watersheds that are not identified as priority key watersheds. There are termed ***transition watersheds***. These watersheds have ongoing restoration activity that will provide secondary benefits by completing the projects over the next two years. Transition watersheds are those that are *not* key watersheds or priority key watersheds (see Figure 6 on page 25).

Figure 9 Watershed Categories for Forest Renewal Investment Consideration

Category I: *Watersheds that have known impacts from pre-Code forestry but are still functional watersheds that will potentially benefit from restoration activities.*
These watersheds are known to have experienced forestry-related habitat impairment or water-quality degradation in at least a portion of the watershed (at least 15% of the total area), or are believed to have a forestry-related threat to fish habitat or water quality, but there are still significant areas of good-quality habitat. It is believed that restoration activity can be rapidly focused on improving conditions or preventing damage before it occurs (e.g., roads with high risk of failure). Category I watersheds can also include those portions of a watershed that contain important identified target species and are upstream of agricultural or urbanized areas, or supply water to a community intake that is upstream of other land uses. Where the important habitat areas are affected by *other* land uses, the watershed is not Category I. This category may include watersheds where restoration activity has previously occurred.

Category II: *Watersheds with impacts from pre-Code forestry as well as other land uses (including private land) and where there is a coordinated restoration plan in place. The watershed must still be functional and able to benefit from coordinated restoration activity.*
Restoration will require a coordinated approach to address all of the land-use impacts. WRP activities in Category II watersheds must be coordinated with other funding sources, such as Fisheries Renewal or HRSEP, in order to significantly affect fish recovery or water quality improvement. This category may include watersheds where restoration activity has previously occurred.

Category IIB: *Watersheds with significant impacts from other land use, including private land, but where there is no coordinated restoration plan in place.*
Restoration of these watersheds through activity only in the forest land will potentially provide low benefit because of impacts from other land uses such as agriculture, mining or residential development.

Category III: *Watersheds with minimal or no pre-Code forestry-related impairment of fish habitat or water quality.*
In these cases, restoration activity may not be required or may not be cost-effective in relation to a small, incremental improvement in fish habitat or water quality. This category includes watersheds with little or no forest development.

Category IV: *Watersheds known to be impacted to such an extent that restoration effort is unlikely to be successful.*
These watersheds are believed to have experienced such extensive habitat or hillslope damage that expenditures will be so high and restoration time so slow that it is not cost-effective to restore.

Category V: *Watersheds with insufficient data to make a determination*
Watersheds with no assessment surveys are temporarily on hold and are subject areas for overview assessments. They do not become candidate watersheds for restoration activity until more is known about their status, but they are not rejected at this point either.

ATTACHMENT B

Road Eligibility Guidelines

B.1. Spirit and intent

The most important goals of the WRP are to mitigate existing environmental damage and reduce the risk of future damage caused by pre-Forest Practices Code road-building works to fisheries and water quality. The intent of the program is to treat higher priority sites in entire watersheds in an effective and efficient manner.

Watershed restoration projects will be considered for funding based on the priority of a particular watershed for treatment, as defined through consultations among Forest Renewal BC partners. Watershed priority from a resource management perspective is determined by assessing fisheries or, in community watersheds, water quality values, level of damage, and the potential for repairing damage.

B.2. Conditions of funding eligibility

Forest Renewal BC spending is meant to:

- cover projects on roads that were originally constructed prior to June 15, 1995;
- add to, not substitute for, expenditures made by government and industry (e.g., appraisal cost allowance);
- cover road projects that are incremental to what would otherwise be normal obligations of licensees or the ministry under pre-Code "standards of the day", those standards that were actually in use when and where the work was done;
- cover road projects that do not represent outstanding contractual obligations of a licensee, where instruction letters – citing failure to comply with contractual obligations, or requiring licensees to carry out remediation work to fulfil contractual obligations – have not been complied with. Such letters include letters about the performance of obligatory activities under permits or prescriptions, or letters instructing licensees to undertake work under the British Columbia Coastal Fisheries Forestry Guidelines, or other forest management guidelines jointly approved or accepted by MoF and licensees, such as the Okanagan Timber Harvesting Guidelines; and
- cover road projects that do not represent outstanding statutory obligations of a licensee -- nothing in WRP eligibility criteria should be construed as overriding the provisions of the Forest Practices Code; nor do the eligibility criteria relieve the MoF and licensees of obligations related to the repair or deactivation of roads as detailed in the Code.

In addition, the funding is meant to:

- cover road projects on crown land; and
- *cover road projects that were not constructed or upgraded by an SBFEP licensee or* the ministry under the SBFE Account.

For these last two conditions, Forest Renewal BC under exceptional circumstances may waive the restriction if the following conditions are met:

- there is a high risk to fisheries and water resources in a target watershed if restoration is not undertaken; and
- the effectiveness of other WRP investments will be reduced or negated if the road work is not addressed.

B.3. Road types and specific eligible works (See Figure 10)

B.3.1 Permit roads

Permit roads are those roads on Crown land that are currently being used under an authority provided by the *Forest Act* and for which practices are prescribed in the *Forest Practices Code of British Columbia Act* and its regulations.

A road permit holder has statutory obligations for maintenance as defined by Section 18, Forest Road Regulations. These maintenance obligations are set out as general principles so as to address variations in site conditions province-wide and are as follows:

a) the structural integrity of the road prism and clearing width are protected;
b) the drainage systems of the road are functional;
c) the transport of sediment from the road prism and its effects on other forest resources are minimized; and
d) the road can safely be used by industrial users, even if industrial use has been temporarily suspended.

In general, environmental upgrading of permit roads is **not** eligible for WRP funding, for example:

- repairs to mitigate environmental damage to aquatic and wildlife habitat, wildlife corridors and water quality in community watersheds resulting from substandard maintenance or construction;
- systematic upgrading; and /or
- any work related to deactivation or general rehabilitation of the road.

If the conditions of funding eligibility are met (see 2) and the road was not constructed or upgraded by an SBFEP licensee or the ministry under the SBFE Account, the following works **may be** eligible on a permit road:

- works to restore fish passage at a stream crossing; and
- works to prevent, mitigate or remedy impacts from upslope Watershed Restoration Projects

Culvert and bridge work to restore fish passage is eligible on a case-by-case basis (see Section B4 for more detail) when the following conditions are met:

- inspections by DFO or MELP have identified a blockage to fish passage; and
- verified fish population and upstream fish habitat exist to make the investment worthwhile.

The following works on permit roads **may be considered** for funding by Forest Renewal BC as a reasonable protection of FRBC's existing investment:

- works to prevent or mitigate potential mass wasting, water flow or other events that might originate on the subject road and impact a Watershed Restoration project downslope, where the effectiveness of the lower slope WRP work will be reduced or negated if the upper road work is not addressed. **(Note: these should be exceptional circumstances.)**

B.3.2. Forest Service Roads

Forest Service Roads are those roads on Crown land that are defined in the *Forest Act* and for which practices are prescribed in the *Forest Practices Code of British Columbia Act* and its regulations.

Forest Service Roads are eligible for WRP funding if:

- they were not constructed or upgraded by an SBFEP licensee or the ministry under the SBFE Account.

In general, environmental upgrading of Forest Service Roads is **not** eligible for WRP funding, for example:

- repairs to mitigate environmental damage to fish and wildlife habitat, wildlife corridors and water quality in community watersheds resulting from substandard maintenance or construction;
- systematic upgrading; and /or
- any work related to deactivation or general rehabilitation of the road.

The following works on Forest Service Roads **may be** eligible:

- works to restore fish passage at a stream crossing;
- works to prevent, mitigate or remedy impacts from upslope Watershed Restoration Projects.

Culvert and bridge work to restore fish passage is eligible on a case-by-case basis (see Section B4 for more detail) where the following conditions are met:

- inspections by DFO or MELP have identified a blockage to fish passage; and
- verified fish population and upstream fish habitat exist to make the investment worthwhile.

The following work on Forest Service Roads **may be considered** for funding by Forest Renewal BC as a reasonable protection of FRBC's existing investment:

- works to prevent or mitigate potential mass wasting, water flow or other events that might originate on the subject road and impact a Watershed Restoration project downslope, where the effectiveness of the lower slope WRP work will be reduced or negated if the upper road work is not addressed. (**Note: these should be exceptional circumstances.)**

B.3.3 Non-Status Roads

Non-Status Roads are those roads on Crown land within provincial forests that have no existing tenure under MoF legislation or that of other ministries. These include old forest roads for which the authority has lapsed, including road permits, cutting permits, special use permits and licences that do not have cutting permits.

Non-status roads are eligible for funding if:

- the conditions of funding eligibility are met (see 3.2.2); and
- they were not constructed or upgraded by an SBFEP licensee or the ministry under the SBFE Account.

The following types of work on eligible non-status roads **may be** funded:

- structural repairs to high-risk sections of road to mitigate landslides, impacts on water quality in community watersheds and impacts on fish passage now occurring or likely to occur;
- repairs to or removal of bridges or culverts to restore fish passage, and alleviate impacts on water quality in community watersheds and on aquatic habitat; and
- deactivation.

B.4 Clarification of Funding Eligibility for Fish Passage Restoration

1. *Small Business Forest Enterprise Program* built or upgraded roads are **not** eligible for FRBC funding.

2. *Non status roads*

   Forest Renewal BC's objective is the deactivation and/or restoration of these roads. If an access need is identified under the Access Management Plan for a Non Status Road, a cost-sharing and maintenance agreement should be developed for any fish passage work that requires culvert replacement.

3. *Permitted or FSR roads built prior to June 15, 1995* **may be eligible on a case-by-case basis** as long as they meet the conditions identified in the Road Eligibility Guidelines.

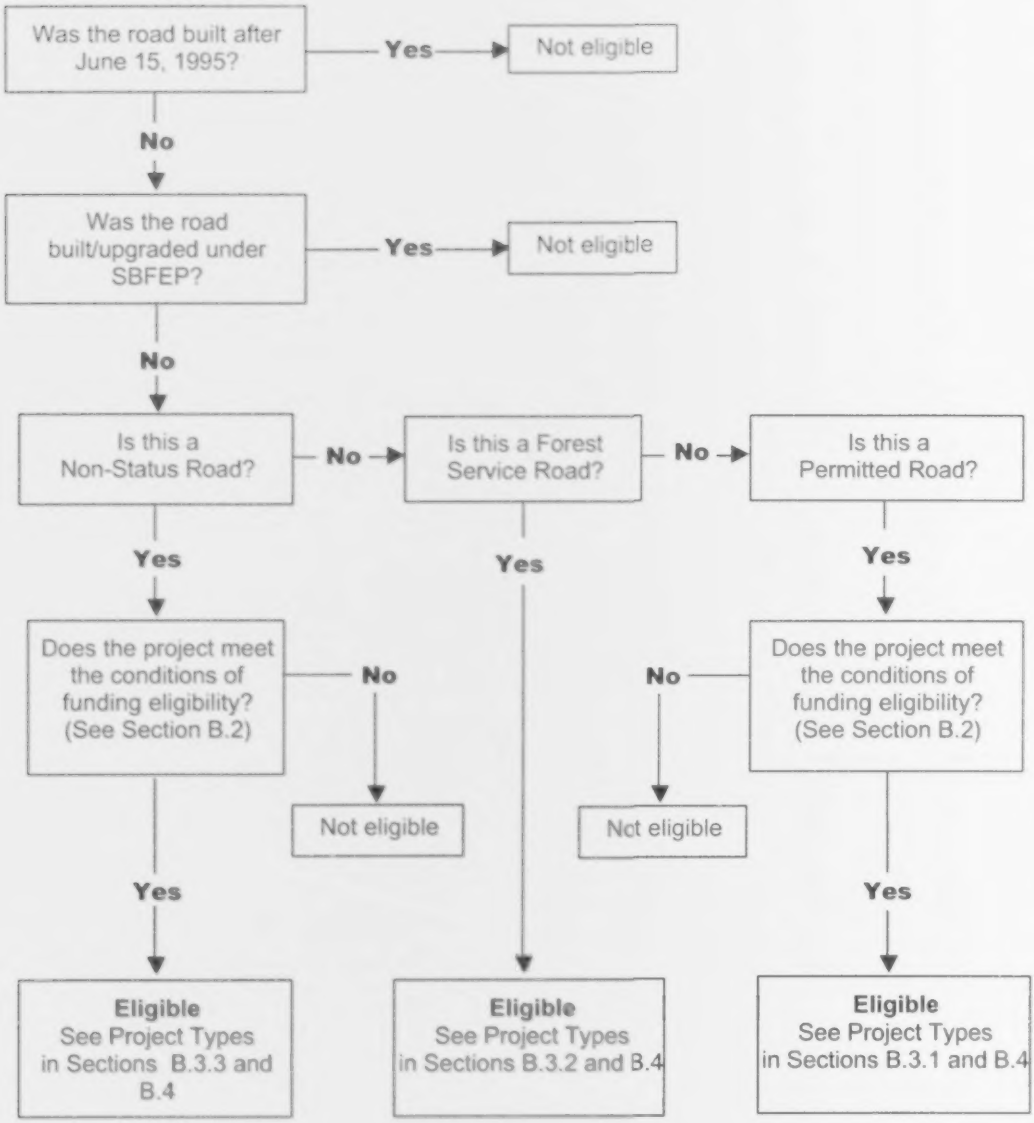
   Forest Renewal BC will be looking for any and all costing sharing avenues available on a case-by-case basis. If none are available and Forest Renewal believes that the identified works will contribute to their Strategic Objective Target (completion of 20% of priority key watersheds), is cost effective and meets the Targeted Watershed objectives, Forest Renewal may fund the identified works.

Decision Requirements

In order for Forest Renewal BC to make sound informed decisions on a case-by-case basis, the following information is required by the proponent:

1. Is the proposed work in a Forest Renewal Targeted Watershed?
2. What road type is the proposed works on? Identified pre- or post-Forest Practices Permitted Road, Forest Service Road, Non Status Road or Small Business Forest Enterprise Program Road?
3. Have assessments or inspections by DFO or MELP identified a blockage to fish passage?
4. Has the existence of fish population and amount of actual upstream fish habitat been verified?
5. What is the resource benefit of opening up the fish barrier?
6. What is the cost-effectiveness of the proposed work (km stream accessed per $)? Include costs of any downstream culvert work required for fish to access the target habitat.
7. What type of structure is proposed and what are the cost estimates?
   a) cost of culvert removal
   b) cost of proposed structure
   c) cost of installation of structure
   d) some alternative structure costs
8. What is the rational for the proposed structure over alternative structures?
9. If proposed structure is a Bridge proponent, is there agreement from both agencies (MoF and MELP) that this structure is indeed the most cost-effective solution to restore fish passage for the site?

Figure 10 WRP Eligibility – Road Deactivation/Stabilization



Explanatory Notes for the Figure 5

1) **Road also means road sections.**

2) **August 5, 1998 memorandum regarding inactive roads in road permits and Forest Renewal funding eligibility:**

File: *11400-01*
22100-01

August 5, 1998

To: *All Regional Managers*

From: *Jim Langridge*
Director
Resource Tenures and Engineering Branch

Re: ***Inactive Roads in Road Permits - Code Responsibilities and WRP Funding Eligibility***

Vancouver Region has raised concerns regarding the licensees' responsibilities under the Forest Practices Code of British Columbia Act and funding eligibility under WRP of those inactive roads which have been inadvertently included in the road permits. The basic issue is that all operations roads that were covered by road permits on June 15, 1995, were automatically grandparented under the Forest Practices Code Of British Columbia Act (the Code) even though, for some situations, it would have been apparent if the licensees had so advised, or as a result of a thorough administrative review, that the licensees:

- ***were no longer using the roads;***
- ***had for all intents and purposes met their contractual obligations under the road permits; and***
- ***should have had the roads deleted from their permits prior to the inception of the Code.***

Further, for those road permits that reached their expiry date after June 15, 1995, districts have replaced the road permits with new versions, again without a thorough review to determine which roads should have been removed from the permits prior to June 15, 1995, and thus should not have been covered by a replacement road permit.
For roads that meet the following criteria, district managers should send a letter to each affected licensee, confirming or indicating which roads are

impacted, and advising that in due course as the permits are amended, these roads will be deleted from the permit.

- *on and after June 15, 1995, the licensee was not using the road for timber harvesting or a related forest practice;*
- *in the opinion of the district manager, the licensee had met its contractual obligations under the road permit prior to June 15, 1995.*

In that same letter, the district managers should clearly indicate that the licensees have met the Code and permit obligations for these roads that should not have been covered by road permit after June 15, 1995.
Note that these same procedures can be applied to roads originally constructed under cutting permits.
Our position is that those roads which meet the above criteria are eligible for consideration for Forest Renewal BC funding under the Watershed Restoration Program, provided that they meet other established eligibility criteria. This issue has been discussed with and agreed to by the Forest Renewal BC office in Victoria. You may wish to apprise your respective Forest Renewal BC regional directors to make them aware of this issue and its resolution.

3) Clarification of funding eligibility for roads built under SBFEP

File: 10205-04

November 19, 1995

To: ALL REGIONAL MANAGERS

Attention: FSIMs and WRP Coordinators

From: Bob Harding
Director
Resource Tenures & Engineering Branch

Re: Watershed Restoration Program - Funding Eligibility Criteria

There have been a number of queries from field staff regarding the eligibility of roads under the Small Business Forest Enterprise Program (SBFEP). For your information, and consistent with the overall eligibility guidelines of the Watershed Restoration Program (WRP), we propose the following additional eligibility criteria for clarification purposes:

1. If a road was built under the SBFEP, or if an existing road (non-status road) was built by some other agency but upgraded under the SBFEP, then this road is an SBFEP road and is not eligible for funding under the WRP.
2. If a road was built either by a licensee or by some other industrial users, and if the SBFEP licensee has only used this road, and if the

SBFEP licensee has provided surface maintenance of this road while using it, then this road is eligible under the WRP for the following activities provided that it meets all the other established eligibility criteria (e.g., no outstanding obligations, etc.): (1) upgrading and structural repairs to protect the environment and other resource values, and/or (2) deactivation.

Please note that the WRP is not a "roads program" to solve the ministry's access problems; therefore, the funding of SBFEB roads from the WRP account, according to the above-noted criteria, must be in the context of overall WRP projects for the treatment of the watershed.

Bob Harding
Director

cc: Al Martin
Julian Paine
Sue Stephens

Section 2.3

RESOURCE MANAGEMENT PLAN

GUIDELINES FOR FOREST HEALTH MAINTENANCE ACTIVITIES

Prepared by
Ministry of Forests

March 17, 2000

Electronic version of tables are available at www.for.gov.bc.ca/hfp/hfp.htm

Executive Summary

As part of the RMP completion process the Ministry of Forests' (MoF) districts report their funding needs for forest health maintenance activities. This document provides guidelines for reporting MoF funding requirements for forest health maintenance.

Forest health maintenance

Forest health maintenance includes an aggressive management program to control bark beetles and defoliators across the province. It also includes ongoing detection and assessment activities that support operational plans to meet the Ministry's stewardship obligations. The program reduces and prevents losses to the forest resource and protects other related values.

For the 2000/2001 fiscal year, the forest health maintenance reporting format will use the existing report format described in the "Bark Beetle and Forest Health Budgeting / Allocation Guidelines" distributed to districts and regions by Forest Practices Branch on March 8, 2000 (attached).

Future RMPs may require more detailed descriptions of priorities as outlined in this guide. The guidelines provided will assist districts in preparing the rationale for forest health funding requests in the short- and long-term.

Forest Health Maintenance

Program Description and Strategic Objectives

The program is categorized by two main sub-programs:

1. Protection of current inventory (bark beetle and defoliator management); and,
2. Supporting operational planning requirements for forest health information.

Protection of Current Inventory Sub-Program:

Large areas of mature and old growth pine, Douglas-fir and spruce exist in the province. Many of these areas are highly susceptible to significant mortality by bark beetle infestations. These insects attack and kill living, mature and over mature trees over large areas. Extensive infestations of these insects have been reported periodically since the first surveys were conducted in the province in 1914.

British Columbia is currently experiencing a bark beetle epidemic due to favourable weather for beetle survival and an abundant host supply. The total infested area is predicted to double within three years and will intensify in areas currently under attack if management is not accelerated. The 1999/00 budget responded by allocating an additional $5.5 million for beetle management above the base ministry forest health program budget of $6.3 million. A similar allocation of $7.8 million is proposed for the 2000/01 budget (with an unknown amount of base funding). When and if normal climatic conditions return to slow population expansion, management activities may resume at a maintenance level.

Strategic Objectives for Bark Beetle Management

1. The province will address bark beetle situations at an early stage to prevent their expansion and protect timber.
2. Headquarters and regions will ensure that districts have bark beetle management plans that adequately address local bark beetle management situations.

Defoliating insects also threaten the survival and growth of standing timber inventory (including immature forests). In certain circumstances, it is economically justifiable to treat defoliator outbreaks to protect stands from damage. Predicting defoliator outbreaks – both their severity and location – can be difficult over more than one year. RMPs should account for that uncertainty by including defoliator monitoring as an essential early warning system to identify potential areas for treatment.

Strategic Objective for Defoliator Management

Defoliator outbreaks will be predicted, monitored and assessed to quantify impacts of damage. If it is necessary, treatments will be done to minimize damage.

Forest Health Information Sub-component:

Holders of operational plans rely on the availability of current supporting forest health information to meet the requirements described in the *Forest Practices Code* and its regulations (specifically the content requirements for forest development plans, silviculture prescriptions, and stand management prescriptions - OPR sections 13, 37(1)(d), and 50(3)(e), respectively). Pest hazard and risk rating, potential impact estimates, and recommendations for measures to reduce pest damage risks are examples of this supporting forest health information. This information is provided by the resource managers as part of their stewardship responsibilities.

Strategic Objective for Forest Health Information

The province will meet its stewardship responsibility to holders of operational plans by supplying adequate forest health information.

Forest Health Maintenance Activities

Table 1 lists what is to be included in the RMP under this guideline. Some or all of the program areas may be included in an RMP depending on management unit issues and opportunities.

Table 1: Activities that may be included in the RMP

Program	Description	Activities
Forest Health Maintenance	Protection of Current Inventory Sub-program: Activities that protect standing timber inventories from insects (primarily the control of bark beetles and defoliators).	Fall and burn treatments, MSMA treatments, defoliator spraying, pheromone baiting, trap trees, single tree removal and aerial and ground surveys
	Forest Health Information Sub-program: Forest health detection and assessment information required for operational planning	Aerial overview surveys, forest health surveys leading to the development of hazard and risk ratings, impact assessments and studies.

Activities included in the FHM component are primarily aimed at protecting mature timber from insects (i.e., management of bark beetles and defoliators). It is also recognized that the Ministry has specific stewardship obligations to supply supporting forest health information for writers of operational plans. The RMP is collecting information to identify and present funding opportunities and needs to the MoF Executive.

Forest Health Maintenance Activities

The report format described in the "2000/01 Bark beetle and Forest Health Budgeting Allocation Guidelines" (attached) distributed to the regions and districts on March 8, 2000 will be used instead of creating a separate Forest Health Maintenance RMP for the 2000/01 RMP.

The following provides a general description of the guidelines for producing a more descriptive RMP than will be supplied through the report format noted above.

Direction

This section provides direction on planning forest health maintenance goals. Activities under this category are those that 1) protect existing timber primarily from insects; and 2), supply basic forest health information to operational planners.

RMP submissions should contain:

- All activities required to meet district, regional and provincial forest health maintenance objectives; and
- Activities that are not legislated obligations included in the SBFEP or licensee programs (e.g., OPR section 37(1)(d) – district manager requires a pest incidence survey for approval of a silviculture prescription)

Objectives

The following broad objectives are to be considered when determining Forest Health Maintenance goals.

1. Where economically beneficial:
   - Ensure existing forest resources are protected from damaging agents; and
   - Ensure damaging agents do not impede silviculture obligations or investments.

2. Where required to meet stewardship obligations:
   - Monitor forest health and the occurrence of damaging agents that impact forest health;
   - Provide guidelines for establishment and management of regenerated areas that minimizes potential pest impacts;

Priorities

Use the following guidelines for assessing regional or district priorities:

1. Bark beetle activities should be justified through the district or regional bark beetle management plan or strategies (attach to the RMP). Beetle strategies and priorities should follow the general provincial strategic objectives previously provided but provide more site-specific information. Criteria that are considered for ranking district beetle management plans are provided in the following section.

Generally, protection of mature timber inventory is a CRITICAL priority but can be lower depending on the values at risk or if the chances of success are low. The beetle management unit strategy will dictate priorities.

2. Defoliator treatments should be supported by a cost:benefit analysis or an existing defoliator management plan (attach to the RMP). Defoliator management priorities are based on defoliator species, values at risk, expected impacts and availability of treatment options.

For major defoliators like western spruce budworm and Douglas-fir tussock moth, priorities are CRITICAL to HIGH but these pests occur in localized infrequent outbreaks. Other defoliators occur sporadically, may not have treatment regimes available, and require impact assessment and are therefore a low priority for treatment but may be a high priority for conducting impact analyses.

3. For activities performed to supply information for licensees to record and evaluate forest health factors and conduct a forest health assessment (if required) for operational plans, follow the guidelines below.

Most activities in this sub-program are ranked as HIGH to MEDIUM priorities depending on the priorities identified in regional or district forest health strategies.

CRITERIA FOR FOREST HEALTH MAINTENANCE ACTIVITY RANKING

1. Protection of Current Inventory Sub-program

Bark beetle and defoliator management are currently the two main forms of forest health protection performed in the province. Protection of stand health due to other pests is most commonly achieved by preventative measures developed through the Forest Health Informaion sub-program (see below). The provincial strategic objective is to have all districts involved in these pest management activities adequately justify their programs through bark beetle or defoliator management plans.

To monitor the appropriateness of these plans, regional and headquarters specialists will review plans to determine if they adequately address the district's beetle/defoliator management situation.

Ranking districts at a provincial level is a complicated task. Generally, forest health protection activities (using the RMP guidelines provided by Corporate Policy and Planning Branch) all fall into the **Critical** or **High** priority categories. District beetle and defoliator management programs are ranked by assessing the following factors:

- Existence of a bark beetle/defoliator management plan
- Beetle/Defoliator species
- Beetle/Defoliator severity and distribution
- History of infestations (current size and distribution of infestation, rate of recurrence, severity of outbreaks)
- Quality of aerial and ground survey information
- Rate of spread (expected impact in short and long-terms)
- Timber supply in relation to host threatened (hazard, values at risk)
- Treatment options and their chances of success (factors include: access, harvesting resources, staff resources, constraints to beetle management – parks, protected areas, First Nations, habitat, visuals, recreation, etc.)

Strategies and tactics for beetle and defoliator management for significant species are available in the Bark Beetle Management and Defoliator Management *Forest Practices Code* guidebooks.

Many districts and regions already have bark beetle management plans and strategies that provide specific descriptions of the current pest situations and the tactics and strategies available to deal with them.

2. Forest Health Information Sub-program

Operational planning needs for forest health information vary throughout the province by forest type, pest distribution and impact. Provincial priorities for these activities are therefore very general and should be explained in detail by regional and district forest health strategies used to guide RMPs.

General guidelines for ranking forest health information activities are:

1. **Highest priority** is for maintaining a region/district's "core" forest health program:
   A) the completion of an annual aerial survey of pest damage (overview at minimum);
   B) as required, conducting ground assessments of significant or potentially significant (surprise) pest occurrences;
   C) development of hazard and risk rating methods for pests that are suspected to have the greatest impact on timber supply and stand management investments (highest importance).
   D) if unknown, conduct an impact analysis for pests suspected to be significant.
   E) provide forest health training to those conducting forest health surveys and treatments

2. **Moderate priority** is given to surveys, treatments, impact studies, and initiation of new trials or research for pests of moderate importance.

3. **Low priority** is given to surveys, treatments, impact studies, and the initiation of new trials or research for low priority pests.

Criteria for Ranking Strategic Importance

The following factors are considered when ranking the importance of various pests for strategic forest health plans.

- Long and short-term impact of the pest (known or expected) on timber supply and other resource values
- Availability of operational detection, impact rating, hazard and risk rating and treatment methods
- Other locally important considerations

Performance Measures

Each district should supply in their RMP key performance measures (i.e., what goals will be achieved if funding requests are granted).

These performance measures should include at minimum the following categories.

For the Protection of Current Inventory Sub-program:

Activity	Unit
Aerial Surveys - Overview	% of district mapped (ha)
Aerial Surveys - Detailed	% of district mapped (ha)
Ground Surveys	% of infestations surveyed
Treatments	% of currently detected infestations addressed by:
Expedited Harvesting	% / Cubic metres
Deferred and baited	% / Cubic metres
Single Tree Removal	Cubic metres
Fall and Burn Treatment	Trees
MSMA Treatment	Trees
Abandoned for salvage	% / Cubic metres
Unsalvagable	% / Cubic metres
Defoliator Treatment	Hectares treated

For the Forest Health Information Sub-program

Activity	Unit
Aerial Surveys - overview	% of district mapped (ha)
Ground Surveys	ha
Studies/ Operational Trials:	
Hazard and risk	Studies completed/ initiated
Impact analyses (G&Y)	Studies completed/ initiated
Treatments	Studies completed/ initiated
Training Courses	Courses (# trained)
Other	

(Enter Management Unit Name)
Forest Health Maintenance Activities
For the 2001/02 Fiscal Year

Protection of Current Inventory Sub-Program:

Activities	Units	Five-year Plan Goals					Annual Plan 2001/02		
		2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Surveys	ha	0	0	0	0	0	$0	$0	
2 Defoliator spraying	ha	0	0	0	0	0	0	0	
3 Aerial Survey - overview	ha	0	0	0	0	0			
4 Aerial Surveys - detailed	ha	0	0	0	0	0			
Totals hectares		0	0	0	0	0			
5 Aerial Survey - overview	hrs flying time	0	0	0	0	0	0	0	
6 Aerial Surveys - detailed	hrs flying time	0	0	0	0	0	0	0	
7 Fall and burn treatment	trees	0	0	0	0	0	0	0	
8 MSMA treatment	trees	0	0	0	0	0	0	0	
9 Pheromone baiting	trees	0	0	0	0	0	0	0	
10 Studies	number	0	0	0	0	0	0	0	
11 Other		0	0	0	0	0	0	0	
Totals		0	0	0	0	0	$0	$0	

Priority is critical, high, moderate, low
It is suggested as a default to use the numbers submitted in the 2000/01 Bark Beetle Allocation / Budgeting process for all 5 yrs of this plan.
However, if it is expected that the activities will increase or decrease due to declining or expanding pest populations, the plan should reflect this expectation.

Forest Health Information Sub-program:

Activities	Units	Five-year Plan Goals					Annual Plan 2001/02		
		2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($)	Funding ($000)	Priority C, H, M, L
1 Ground Survey	ha	0	0	0	0	0	$0	$0	
Totals hectares		0	0	0	0	0			
2 Aerial Survey - overview*	hrs flying time	0	0	0	0	0	0	0	
Studies/ Operational Trials									
3 Hazard and risk	number	0	0	0	0	0	0	0	
4 Impact analyses (G&Y)	number	0	0	0	0	0	0	0	
5 Treatments	number	0	0	0	0	0	0	0	
6 Training Courses	number	0	0	0	0	0	0	0	
7 Other		0	0	0	0	0	0	0	
Totals		0	0	0	0	0	$0	$0	

Priority is critical, high, moderate, low

* - reported in this sub-program only if district has no protection of current inventory sub-program

Forest Health Maintenance Performance Measures
updated July 26, 2000
Protection of Current Inventory Sub-program:

Activity	Unit
Aerial Surveys - Overview	est. % of forested area surveyed/hrs flown/ ha
Aerial Surveys - Detailed	est. % of susceptible area surveyed/ hrs flown/ ha
Ground Surveys	est. % of aerially detected infestations gd. surveyed/ ha
Treatments	est. % of currently detected infestations addressed by:
Expedited Harvesting	% / Cubic metres
Deferred and baited	% / Cubic metres / trees baited
Single Tree treatments:	% / Cubic metres
Single Tree Removal	*Cubic metres*
Fall and Burn Treatment	*Trees*
MSMA Treatment	*Trees*
Abandoned for salvage	% / Cubic metres
Unsalvagable	% / Cubic metres
Defoliator Treatment	Hectares treated

est. = roughly estimated percentage to the nearest 20%

Forest Health Information Sub-program

Activity	Unit
Aerial Surveys - overview*	% of district mapped (ha)
Ground Surveys	ha
Studies/ Operational Trials:	
· Hazard and risk	Studies completed/ initiated/maintained
· Impact analyses (G&Y)	Studies completed/ initiated/maintained
· Treatments	Studies completed/ initiated/maintained
Training Courses	Courses (# trained)

* - reported in this sub-program only if district has no protection of current inventory sub-program

Table 2: Inventory Status and Need by Business Driver

Region: _____, District: _____

Inventory	Type (Intensity)	Status	Business Driver: International			National			Strategic				Regional/Sub-Regional			Local							Operational Planning Regulations						
			Convention on Biological Diversity	Kyoto Protocol	Criteria + Indicators	National Forest Strategy	Canadian Biodiversity Strategy	National Forest Inventory	Land Use Charter (CORE)	Protected Areas Strategy Process	First Nations Treaty Negotiations	Identified Wildlife Management Strategy	Regional Land Use Planning	LRMP	Timber Supply Review on TSA's	Resource Management Zones	Landscape Units	Watershed Assessments	Riparian Assessments	Sensitive Areas	Recreation Features, Sites	Ungulate Winter Ranges	Forest Development Plans	Silviculture Prescriptions	Range Use Plans	Stand Management Prescriptions	Road Design Regulations	Harvesting Regulations
Archaeology	AOA																												
	AIS																												
Forest Health	forest health assessment																												
	pest incidence surveys																												
Karst	reconnaisance																												
	planning																												
Range	range ecosystem inventory																												
	range cultural inventory																												
Recreation	visual landscape inventory																												
	recreation opportunity																												
	recreation features																												
Terrain (Stability) Mapping (including Soils)	Level E/D/C reconnaisance																												
	Level C/B/A - detailed																												
	TS Field Assessment																												
Traditional Use	TU sites																												
Vegetation Resources Inventory (VRI)	depletion update																												
	retrofit to VRI standards																												
	new photo estimation																												
	ground sampling (timber)																												
	ground sampling (full VRI)																												
Growth and Yield	productivity assessment																												
	growth model																												
Ecoregion Mapping	ecoregion interpretations																												
Broad Ecosystem Inventory	BEI																												
Predictive Ecosystem Mapping*	PEM - Level 1 (overview)																												
	PEM - Level 2 (detailed)																												
Terrestrial Ecosystem Mapping*	TEM - Level R (overview)																												
	TEM - Level 5 (reconnaissance)																												
	TEM - Level 4 (intensive)																												
Rare Ecosystem Inventory	REI																												
BCF: Fish and Fish Habitat	summary (FISS)																												
	overview (1:50,000)																												
	reconnaisance (1:20,000)																												
	Intensive (1:5,000)																												
	species / population inv																												
	lake classification																												
Water Quality/Quantity	water quantity inventory																												
	water use inventory (comm.w/s)																												
	water quality inventory																												
Wildlife and Wildlife Habitat	BEI interpretations																												
	TEM/PEM interpretations																												
	species presence																												
	species relative abundance																												
	species absolute abundance																												
	rare & endangered species																												

*Terrestrial Ecosystem Mapping has an alternative, Predictive with a lower level of intensity of Ecosystem Mapping (PEM) ground truthing. All have RIC standards

DRAFT May 15, 2000

Legend:

- A = Good status
- B = Satisfactory status
- C = Poor Status
- n/d = not done
- n/a = not applicable

- H = Inventory is of high improtance to the Business Driver
- M = Inventory is of moderate importance to the Business Driver
- L = Inventory is of low importance to the Business Driver

- Explicitly required by legislation / regulation
- Implicitly required by legislation / regulation (interpretation involved)
- Needed to set management objectives or for resource management
- All or portion of inventory required for planning process
- Information not currently required

2.4

Table 1: Inventory Requirement by Business Driver

Inventory	Type (Intensity)	RIC Standards	Legislative Authority: Forest Practices Code (FPC) of BC Act	FPC Operational Planning Regulations	Forest Act	Ministry of Forests Act	Ministry of Environment Act	Land Act	Wildlife Act	Fisheries Act (Canada)	Fish Protection Act	Environmental Assessment Act	Heritage Conservation Act	Water Act	Waste Management Act	Business Drivers: International: Convention on Biological Diversity	Kyoto Protocol	Criteria + Indicators	National: National Forest Strategy	Canadian Biodiversity Strategy	National Forest Inventory	Strategic: Land Use Charter (CORE)	Protected Areas Strategy Process	First Nations Treaty Negotiations	Identified Wildlife Management Strategy	Regional/Sub-Regional: Regional Land Use Planning	LRMP	Timber Supply Review on TSA's	Local: Resource Management Zones	Landscape Units	Timber Supply Review on TFLs	TFL Management Plans	Watershed Assessments	Riparian Assessments	Sensitive Areas	Recreation Features, Sites	Ungulate Winter Ranges	Operational Planning Regulations: Forest Development Plans	Silviculture Prescriptions	Range Use Plans	Stand Management Prescriptions	Road Design Regulations	Timber Harvesting Regulations
Archaeology	AOA		2		4	4							2					4	4							3	3	3	4		L3	L2											
	AIS	Y																4	4																								
Forest Health	forest health assessment	partial	2	1	2													4	4								4	2	4		L2	L2					L1			L2		
	pest incidence surveys			1		2												4	4									2			L2	L2						L1		L2		
Karst	reconnaissance		4																				3			4			4	3					4							
	planning																																	3									
Range	range ecosystem inventory		2	1	1	2												4	4							3	3	1		3	L1	L1					L1					
	range cultural inventory			1																				4													L1					
Recreation	visual landscape inventory	Y	2	1	1	2												4	4				3			3	3	1	4	3	L1	L1			3	2	L3	L1			L1	L4
	recreation opportunity	Y	2		2	2												4	4				3	4		3	3	4	4	3	L4	L2			3	2						
	recreation features	Y	2	4	1	2												4	4				3	4		3	3	1	4	3	L1	L1			3	2	L4	L4			L4	L4
Terrain (Stability) Mapping (including Soils)	Level E/D/C reconnaissance	Y		2	2	4				2								4	4				3	4			4	2	4		L2	L2	2		3		L2					
	Level C/B/A - detailed	Y		2	2													4	4				3				4	2	4			L2	2		3		L2					
	TS Field Assessment			1																													3									
Traditional Use	TU sites	Y		1	4	4							2					4	4				4	3		3	3	3	4		L3					L1					
Vegetation Resources Inventory (VRI)	depletion update			1	1	1	4										4	4	4		4		3	3		3	3	1	4	3	L1	L1					L3	L1		4	L1		
	retrofit to VRI standards				3	3	4										4	4	4		4							3		4	L3	L3										
	new photo estimation	Y		2	3	3	4										4	4	4		4							3	4		L3	L3					L2			L2		
	ground sampling (timber)	Y		2	2	2	4										4	4	4		4							2	4	4	L2	L2					L2			L2		
	ground sampling (full VRI)	Y		4	4	4	3		4							3	4	3	3	3	4	3						4			L4	L4							4			
Growth and Yield	productivity assessment		2	1	1													4	4									1			L1	L1								L1		
	growth model		2	1	1													4	4									1			L1	L1								L1		
Ecoregion Mapping	ecoregion interpretations															3	3	3	3	3																						
Broad Ecosystem Inventory	BEI	Y	2		4	4	2		3							3		4	4	3		3	3	4	3		3	3		3	L3										
Predictive Ecosystem Mapping*	PEM - Level 1 (overview)	Y			4	4	2		4							3		3	3	3		3	4			3	3	4		3	L3	L3									
	PEM - Level 2 (detailed)	Y					2									4		4	4	4			4			4	4	4		4	L4	L4					2				
Terrestrial Ecosystem Mapping*	TEM - Level R (overview)	Y			4	4	2		4							3						3				4	4			4	L4	L4									
	TEM - Level 5 (reconnaissance)	Y					2									4																										
	TEM - Level 4 (intensive)	Y														4									3												2					
Rare Ecosystem Inventory	REI																																									
BCF: Fish and Fish Habitat	summary (FISS)	Y	2	2	4	4	2		3							3		3	3	3		3	3	4	3		3	3		3	L3			2	3			L2					
	overview (1:50,000)	Y					2		3							4		4	4	4			3	4	3		4			3												
	reconnaisance (1:20,000)	Y		2			2		3	2	2					4		4		4					3			3		3	L3	L2	1	2	3			L2		L2	L2	L2	L2
	intensive (1:5,000)		2	2			2		3	2	2									4					2								2	2	3				L2		L2	L2
	species / population inv						2		3		2					4		4	4	4			3		3	3	4			3		L2			3							
	lake classification		2	2			2													4							4			3			2	2			L2	L2				
Water Quality/Quantity	water quantity inventory	Y	2	2			2		4	4	2	3		2	2	3		3	3	3		4				3	3		3	3		L2								L2	L2
	water use inventory (comm.w/s)		1	1	4	4	2	1						1												3	3	2	3	3			1				L1	L3			L4	L4
	water quality inventory	Y	2	2	4	4	2			2	2	3			2			4	4							3	3	2	3	3	L2	L2	4						L2			
Wildlife and Wildlife Habitat	BEI interpretations	Y	2		4	4	2		2							3		4	4	3		3	3	4	3		3	3	4	3	L3	L2										
	TEM/PEM interpretations	Y	2				2		2							4		3	3	4			3		3		3		4	3		L2			3		L2					
	species presence	Y					2		2							4		4	4	4		3	4		3	3	3	3	4		L3	L2					L3					
	species relative abundance	Y														4		4	4	4					3	3											L3					
	species absolute abundance	Y														4		4	4	4																						
	rare & endangered species	Y		3	4	4	2		2		3	3				4		4	4	3	4	3	3	4	3	3	3	3	4	3	L3			4	4		L3	L4	L4	L3	L3		

*Terrestrial Ecosystem Mapping has an alternative, Predictive Ecosystem Mapping (PEM) with a lower level of intensity of ground truthing. All have RIC standards.

Legend:

1	Explicitly required by legislation / regulation
2	Implicitly required by legislation / regulation (interpretation involved)
3	Needed to set management objectives or for resource management
4	All or portion of inventory required for planning process
	Information not currently required

"L" preceding Category denotes Licencee or SBFEP obligation

DRAFT May 15, 2000

Table 2: Inventory Status and Need by Business Driver

Region: _____, District: _____

Inventory	Type (Intensity)	Status	International: Convention on Biological Diversity	International: Kyoto Protocol	International: Criteria + Indicators	National: National Forest Strategy	National: Canadian Biodiversity Strategy	National: National Forest Inventory	Strategic: Land Use Charter (CORE)	Strategic: Protected Areas Strategy Process	Strategic: First Nations Treaty Negotiations	Strategic: Identified Wildlife Management Strategy	Regional/Sub-Regional: Regional Land Use Planning	Regional/Sub-Regional: LRMP	Regional/Sub-Regional: Timber Supply Review on TSA's	Local: Resource Management Zones	Local: Landscape Units	Local: Watershed Assessments	Local: Riparian Assessments	Local: Sensitive Areas	Local: Recreation Features, Sites	Local: Ungulate Winter Ranges	Operational Planning Regulations: Forest Development Plans	Operational Planning Regulations: Silviculture Prescriptions	Operational Planning Regulations: Range Use Plans	Operational Planning Regulations: Stand Management Prescriptions	Operational Planning Regulations: Road Design Regulations	Operational Planning Regulations: Harvesting Regulations
Archaeology	AOA																											
	AIS																											
Forest Health	forest health assessment																											
	pest incidence surveys																											
Karst	reconnaisance																											
	planning																											
Range	range ecosystem inventory																											
	range cultural inventory																											
Recreation	visual landscape inventory																											
	recreation opportunity																											
	recreation features																											
Terrain (Stability) Mapping (including Soils)	Level E/D/C reconnaisance																											
	Level C/B/A - detailed																											
	TS Field Assessment																											
Traditional Use	TU sites																											
Vegetation Resources Inventory (VRI)	depletion update																											
	retrofit to VRI standards																											
	new photo estimation																											
	ground sampling (timber)																											
	ground sampling (full VRI)																											
Growth and Yield	productivity assessment																											
	growth model																											
Ecoregion Mapping	ecoregion interpretations																											
Broad Ecosystem Inventory	BEI																											
Predictive Ecosystem Mapping*	PEM - Level 1 (overview)																											
	PEM - Level 2 (detailed)																											
Terrestrial Ecosystem Mapping*	TEM - Level R (overview)																											
	TEM - Level 5 (reconnaissance)																											
	TEM - Level 4 (intensive)																											
Rare Ecosystem Inventory	REI																											
BCF: Fish and Fish Habitat	summary (FISS)																											
	overview (1:50,000)																											
	reconnaisance (1:20,000)																											
	Intensive (1:5,000)																											
	species / population inv																											
	lake classification																											
Water Quality/Quantity	water quantity inventory																											
	water use inventory (comm w/s)																											
	water quality inventory																											
Wildlife and Wildlife Habitat	BEI interpretations																											
	TEM/PEM interpretations																											
	species presence																											
	species relative abundance																											
	species absolute abundance																											
	rare & endangered species																											

*Terrestrial Ecosystem Mapping has an alternative, Predictive with a lower level of intensity of Ecosystem Mapping (PEM) ground truthing. All have RIC standards

DRAFT May 15, 2000

Legend:

A = Good status	H = Inventory is of high improtance to the Business Driver
B = Satisfactory status	M = Inventory is of moderate importance to the Business Driver
C = Poor Status	L = Inventory is of low importance to the Business Driver
n/d = not done	
n/a = not applicable	

	Explicitly required by legislation / regulation
	Implicitly required by legislation / regulation (interpretation involved)
	Needed to set management objectives or for resource management
	All or portion of inventory required for planning process
	Information not currently required

Section 2.5

GUIDELINE FOR FOREST SERVICE ROAD MANAGEMENT COMPONENT

Prepared by Ministry of Forests

April 17, 2000

RMP Guidelines for the Forest Service Road and Bridge Components

Goal and objectives of the RMP Guidelines

The goal of the RMP Guidelines for the Forest Service Road and Bridge Components is to provide a planning mechanism that assists the ministry in identifying FSR maintenance and bridge replacement priorities within each Forest District in accordance with current legislative requirement and government policy.

Overview of FSR and Bridge Replacement RMP Component Process

Each region will be required to develop a template for the forest district FSR maintenance component of the resource management plan. Each forest district will be required to complete the template and submit their resource management plan to the region. The district plan will identify road maintenance and bridge replacement priorities on all forest district maintained Forest Service roads (FSRs) and FSR bridges and structures in accordance with the RMP component guidelines.

General Comments

- Responsibility for maintenance of Forest Service roads and structures is defined in the *Forest Practices Code of British Columbia Act* (the Act) as being held by the district manager. The Act further provides for the district manager to assign some or all of the responsibility for maintenance to a road use permit holder. In demonstrating due diligence, records of our activities form an integral part of any defence we prepare if and when challenged by internal or third-party review. The RMP can serve as such a record and, in concert with policy, also provide a useful tool for communicating objectives, strategies, risks, obligations expenditure opportunities, priorities and funding requests.

- For 2001/02 and the subsequent two fiscal years, activities that are a resource stewardship priority must be identified within the RMP. Forest Service Road and Bridge Maintenance (including permanent deactivation), and Bridge Replacement are three of these activities that must be identified.

- For 2001/02, Forest District Resource Management Plan reporting requirements for the FSR maintenance component will be developed by each region in consultation with the districts.

- Each region is required to roll-up the district plans into a regional resource management plan and submit to branch in the approved format as outlined below and on the attached RMP Template. Use a separate template for each year of the three-year RMP.

Forest District FSR and Structure Maintenance Component

RMP Content:
As stated above each region will request their districts to provide sufficient detail to facilitate regional roll up of the FSR data into the regional RMP template. This detail may include:

1. road projects and activity;
2. inspection strategy;
3. surface maintenance strategy;
4. structural maintenance strategy;
5. emergency maintenance strategy;
6. obligation matrix (table indicating who holds responsibilities for inspections, surface maintenance, and structural maintenance by FSR or section of FSR)
7. Maintenance Schedule & Cost Tables [5-year projection of activities and costs by district and FSR for
   1) surface maintenance where MOF is responsible for delivery and
   2) structural maintenance of a) roads and b) engineered structures (includes major culverts, bridges, retaining walls and other similar structures).

Ranking of FSRs and structures

FSRs considered eligible for funding are to be ranked with respect to the following criteria:

- Ranking of roads (High, Moderate, Low) are to be in accordance with the ranking system shown in Table 1 for road maintenance.
- Rank FSRs and structures requiring vote funding maintenance in order of potential safety risk to non-industrial users, with greater consideration for those roads that may also impact private property and utilities;
- Low hazard/risk roads that will not be maintained may still be left open for use at the discretion of the district manager;
- Do not rank road or structure maintenance in order to protect the structural integrity of a road unless it is a residual benefit to providing for user safety;
- Do not rank those FSRs and structures which are under permit and require no vote funding;
- Do not rank road or structure maintenance to provide environmental protection unless it is a residual benefit to providing for user safety.

Table 1: Risk Ranking or Priority Criteria

Consistent with the Deputy Minister's memo dated August 17, 1999, following are the criteria for determining risk based on hazards and consequences.

High (H)	Legal requirement under Code. Continuing adverse impacts on public safety and the nature of the use of the road is such that it is not possible to close or to deactivate the road to eliminate the risk; such as: 1. personal injury due to landslides or mass wasting, washouts, insufficient sight distance 2. damage to private property/utilities due to landslides, washouts; 3. serious long-term damage to fish habitat and water quality due to sedimentation, mass wasting;
Moderate (M)	Legal requirement under Code. Where: 1. there is an opportunity to close roads or temporarily deactivate roads to reduce risk to public safety, i.e. during heavy rainfall, stream freshets, or where alternate access to the public facility exists 2. damage to property/utilities can be readily mitigated 3. impacts on fish habitat and water quality are short term in nature
Low (L)	Legal requirement under Code. Where the resources at risk are not present or the potential failures will create little or no impact on resources.

Forest Service Bridge and Major Structures Replacement Component – Acct. 40806

This component is for the Bridge Replacement Program. The ranking process is based on a Provincial Ranking Process, which is fibre flow driven.

RMP Content:

The data required in this component is the same as Fiscal 1999/00 and 2000/01. Each region should have a register for all bridges and major structures That register should provide sufficient detail to meet RMP roll-up requirements.

The account numbers are the 2000/2001 Chart of Accounts for Engineering and are the basis of estimating, allocating and tracking actual costs.

Base costs are budgeted and allocated at region. The spreadsheet columns in the Regional Roll-up Template entitled BUDGET ALLOC. and ACTUAL COSTS may be used to track estimated vs. actual costs in the designated categories. It can be done twice a year, when the funds are allocated and after the end of the fiscal year, or once a year, after the end of the fiscal year.

In the Road and Bridge section of the Template, cells shown as "0's" are locked, as these items would not be included in a base budget, or vice versa in an incremental budget.

Ranking of Structures on FSRs

Structures considered eligible for funding are to be ranked with respect to the following criteria:

- Rank FSR structures requiring vote funding for replacement within the next two fiscal years in order of potential safety risk to non-industrial users, with greater consideration for those structures that may also impact private property and utilities;
- Low hazard/risk structures that will not be maintained may still be left open for use at the discretion of the district manager;
- Do not rank structure replacement in order to protect the structural integrity of a bridge unless it is a residual benefit to providing for user safety;
- Do not rank structure replacement to provide environmental protection unless it is a residual benefit to providing for user safety.

Explanation of Prioritization Ranking criteria

Rank 1: Industrial Use (H, M, L)
Industrial use (fibre flow) criteria must reflect the need for the structure according to the approved Forest Development Plan.

Rank 2: Non-Industrial Use
This is to address structural integrity and public users' safety.

Rank 3: Environmental Protection
Detrimental impacts of the existing structure on the environment are to be considered. Structure-related erosion and channel restrictions in fish-bearing streams and community watersheds are to be given high consideration.

Table 2 provides a system of ranking a chosen structure based on the Prioritization Criteria.

Table 2 – Structure Ranking Criteria

Criteria *	High Impact	Moderate Impact	Low Impact
Rank 1 *Industrial Use (fibre flow)*	11 points Industrial access required as per approved FDP & AMP for 2000-2001	4 points Access required within next 2 years as per approved FDP & AMP	0 points Non-industrial access required in next 2 years as per approved FDP & AMP
Rank 2 *Non-Industrial Use (safety)*	10 points Bridge is load rated to less than 5 tonnes and has greater than 20 potential users in any given month	1 point Bridge is load rated to less than 20 tonnes and has less than 20 potential users in any given month	0 points Bridge is load rated to more than 15 tonnes and is presently adequate for non-industrial users
Rank 3 *Environmental Protection*	8 points Structure is causing or has potential to cause serious environmental damage if not corrected	3 points Structure currently impacting stream values	0 points Structure presents a minimum potential for environmental damage.

Regional "Roll-up" Template for the Forest Service Road and Bridge Components

The template as shown is intended for forest region roll-ups and Victoria HQ. It is expected that districts will have reviewed each FSR for maintenance and modification requirements, risk-rated and estimated cost of works and then summarized the results on a spreadsheet.

General Comments:

- Only FSR maintenance and replacement activities which are the DM's responsibility (i.e. exclude SBFEP) are to be shown in the RMP roll-up.
- Regardless of this RMP process, district managers are expected to keep road and bridge registers for all FSRs in each forest district.
- Non-status road deactivation, maintenance and rehabilitation requirements are to be identified in the non-status road deactivation and rehabilitation component of the RMP.

Explanation Regional Roll-up Template

Base Costs	- Are for high priority/critical projects and incremental costs are for remaining projects. See Table 1.
	- These are normally budgeted at the regional level. Account numbers are the 2000/2001 Engineering Chart of Accounts coding.
	- Cells shown as '0' are locked so that funding $ cannot be included
	- Most activities are self-explanatory; i.e. right-of-way acquisition, inspection of bridges/culverts as per Forest Practices Code (FPC) requirements, railway crossings are usually under contractual agreement with railway companies.
	- Emergency repairs; i.e. washouts during freshets; region should budget $ for all districts in order to provide a pool of dollars which can then be allocated on some priority basis.
Surface Maintenance	- Include any activity which falls under the definition of surface maintenance of roads and bridges
Modification – Bridge and Major Culvert Replacement	- This is for Bridge Replacement Program. The ranking process is based on a Provincial Ranking Process, which is fibre-flow driven. As per Table 2 Vote $.
Modification and Other Works	- Minor road relocations, road structural repairs, stream culvert replacement, riprap placement, etc.
Road Deactivation	- For FSRs only, NSRs are dealt with under the Non-Status Road Deactivation RMP
Account Numbers	- Are from 2000/2001 Chart of Accounts. Important to make payments using the proper account, because in future years the allocation process will be a roll-up of these accounts so some historical information is desirable. For work carried out using an SBFEP, Silviculture or any other account, an FS471, Transfer of Account, should be completed. MOTH or other agency/ministry funding will be Journal Vouchered.
Output Units & Goals	- Straightforward, but it is mandatory that these units are used for regional/provincial roll-up purposes
PRIORITY	- High-Moderate-Low (see table 1 Risk Ranking)

RESOURCE MANAGEMENT PLAN - ENGINEERING PROGRAM

FOR YEAR _____ REGION _____

ACTIVITY	ACCOUNT	PRIORITY	OUTPUT UNITS	OUTPUT GOALS	ESTIMATED COSTS BASE $	CUMUL. BASE $	INCR. $	CUMUL. INCR. $	TOTAL EST. $	BUDGET ALLOC.	ACTUAL COSTS	COMMENTS
Fixed Costs (region $):												
Right-of-way acquisition	*40802*	H	NO.			0	0		0			
emergency repairs	*40803*	H	NO.			0	0		0			
inspection of bridges/major culverts	*40804*	H	NO.			0	0		0			
railway crossing maint.	*40805*	H	NO.			0	0		0			
subtotal					#VALUE!		#VALUE!		#VALUE!			
Surface Maintenance	*40805*	H	KM			0	0	0	0			
		M	KM		0	0		0	0			
(e.g., grading, brushing, ditch cleanout, bridge deck cleaning and repair)		L	KM		0	0		0	0			
subtotal					#VALUE!		#VALUE!		#VALUE!			
Modification-Bridge and Major Culvert Replacement	*40806*	H	NO.			0	0	0	0			
		M	NO.		0	0		0	0			
		L	NO.		0	0		0	0			
subtotal					#VALUE!		#VALUE!		#VALUE!			
Modification-Other Works	*40807*	H	NO.			0	0	0	0			
		M	NO.		0	0		0	0			
(e.g., road relocation, stream culvert replacement, road stability repair)		L	NO.		0	0		0	0			
subtotal					#VALUE!		#VALUE!		#VALUE!			
Road Deactivation	*40808*	H	KM			0	0	0	0			
		M	KM		0	0		0	0			
		L	KM		0	0		0	0			
subtotal					#VALUE!		#VALUE!		#VALUE!			
TOTAL					#VALUE!		#VALUE!		#VALUE!			

Section 2.6

GUIDELINE FOR FOREST RENEWAL BC NON-STATUS ROAD DEACTIVATION AND REHABILITATION COMPONENT

Prepared by Ministry of Forests

February 09, 2000

Introduction

Since 1994, Forest Renewal BC has funded the watershed restoration program which was established to mitigate the impacts of pre-Code harvesting operations and to protect forest resources. In 1998 the program priorities changed to focus specifically on the restoration of watersheds assessed as having high fish and community water quality values. This change in combination with reduced funding for the watershed restoration program has resulted in restoration needs not being met where fish values and community water quality are not considered leading issues. Specifically, road deactivation and repairs[1] of non-status roads and associated hillside stabilization for the purpose of public safety, protection of infrastructure, prevention of erosion on the forest land base, and reduction of aesthetic impacts, is not being addressed.

The mandate of the Ministry of Forests dictates that forest resources are managed "having regard to the long term economic and social benefits they may confer on the province".[2] To this end, a resource management plan (RMP) to identify and monitor risks to the forest resources represented by the above outstanding watershed restoration needs is considered an essential part of documentation of risks and a process to seek the necessary funding. The Ministry of Forests is the lead agency in this RMP as the funding pressure is a primarily a concern of the ministry.

Objective

The objective of a non-status road deactivation and rehabilitation resource management plan is to identify and prioritize watershed restoration projects that do not meet the current funding priorities under the enhanced environmental values (watershed restoration) program but which could be implemented should a source of funding become available. The investment made in this resource management plan component will significantly reduce the future costs of correcting damage resulting from mass wasting and the cumulative erosion of watershed slopes. In addition, failure to deal with high profile aesthetic impacts may result in the imposition of constraints which could restrict future harvesting opportunities.

Criteria

Eligibility

In order to be eligible for inclusion in the non-status road deactivation and rehabilitation resource management plan a proposed project must:

1. not be funded, or not be submitted for funding, under Forest Renewal BC's, Enhancing Environmental Values resource management plan;
2. be associated with a forest practice but not one that has an obligation under the Forest Practices Code;
3. be located on Crown land.

---

[1] Localized repairs to mitigate an imminent environmental or safety disaster are eligible.

[2] Section 4(b) of the Ministry of Forests Act.

Priority

Districts should conduct a standard risk assessment procedure[3] on selected sites and assign priorities according to the following guidelines.

1. High — the hazard represents a risk to public safety and infrastructure
2. Moderate — the hazard represents a risk to a substantial timber resource or other environmental resource
3. Low — the hazard represents a risk to aesthetic values, a minor timber resource, or a reduction in traditional access.

Note that the above is a guideline and degree of risk may alter the ranking category above. An example would be a significant risk to aesthetic values with longer term economic implications. Such exceptional circumstances should be accompanied by a short rationale in column K of the data template.

Process

Each Ministry of Forests district is to contact their licensees in order to solicit input for the road deactivation and rehabilitation resource management plan. Local knowledge should also comprise part of the input. The district Engineering Officer forwards a completed digital copy of the information requested in Appendix 1 of this resource management plan to their regional headquarters. The regional engineering section will then screen and compile this data before forwarding it to Victoria headquarters. The regional submission must be in Victoria before the end of September. The Corporate Policy and Planning Branch will collate the regional submissions and post the current version of the resource management plan on the Ministry of Forests intranet. Projects under the Road Deactivation and Rehabilitation RMP are to address site specific problems so the ranking is by projects not watersheds. The watershed name or watershed number columns in the template are only to enable a cross reference to EEV works for co-ordination purposes. Projects submitted in the Road Deactivation and Rehabilitation template should not duplicate works proposed by licensees under EEV.

In order to ensure consistency of the data set, all information collected for this resource management plan must adhere to the following guidelines.

Spreadsheet Column	Spreadsheet Name	Instructions
A	Region	Use the three letter designation for the appropriate region (e.g. RVA = Vancouver Forest Region)
B	District	Use the three letter designation for the appropriate district (e.g. DQC = Queen Charlotte Islands Forest District)
C	Watershed Number	Use the same watershed number as found in the Forest Renewal BC resource management plan (If it exists on your region).
D	Watershed Name	Use the same watershed name as found in the Forest Renewal BC resource management plan.
E	Project Name	Use any unique name that reflects the area where the project is to be conducted. This will commonly be a sub-basin name.
F	Proponent	Insert the name of the licensee or agency who will lead the project.
G	Activity	Use one or more of the following codes. RD = road deactivation

[3] Ministry of Forests Engineering Manual, Section 8.3

Spreadsheet Column	Spreadsheet Name	Instructions
		RR = road repair HR = hillside rehabilitation
H	Units	Estimate the size of the project by entering the number of units according to the activity type as indicated below. RD = number of km of road to be deactivated RR = number of sites to be repaired HR = number of ha of hillside to be rehabilitated
I	Estimated Cost	Enter a rough estimate rounded off to the closest $1000 (minimum value of $1000).
J	Priority	The districts, in consultation with the licensees should rank each project as either High (1), Moderate (2) or Low (3) priority according to the guidelines cited above.
K	Benefit to	Use one or more of the following terms: Infrastructure (e.g. powerline, maintained road, recreation site, etc.) Plantation Safety (e.g. active block down-slope) Access (i.e. access will be lost unless the activity is undertaken) Environment (e.g. wildlife) Aesthetics (i.e. view)

Although the non-status road deactivation and rehabilitation resource management plan is a stand alone document, other related resource management plans are listed below.

RMP	Funding Source		
	Historical	Present	Future
Watershed Restoration Program	Forest Renewal BC	Forest Renewal BC	Forest Renewal BC
Non-status Road Deactivation and Rehabilitation	Forest Renewal BC	Partial*	?
Bridge Replacement	Ministry of Forests & Forest Renewal BC	Ministry of Forests	Ministry of Forests
FSR Maintenance	Ministry of Forests	Ministry of Forests	Ministry of Forests

* Only funded by FRBC if works are part of targeted watersheds under the EEV resource management plan.

Appendix I

A	B	C	D	E	F	G	H	I	J	K
Region	District	RMP Watershed Number	Watershed Name	Project Name	Proponent	Activity	Units	Estimated Cost	Priority	Benefit to
RVA	DCR	25	Sonora Island	Black Creek	MoF	RD	14	$ 10 000	2	plantation
RVA	DQC	148	Chinukundl Creek	Chinukundl Creek	MoF	HR	2.6	$ 6 000	2	infrastructure

Non-status Road Deactivation and Restoration Resource Management Plan

Count Region	District	RMP Watershed Number	Watershed Name	Project Name	Proponent	Activity	Units	$ - Estimated Cost	Priority	Benefit to

Section 2.7

RESOURCE MANAGEMENT PLAN

GUIDELINES FOR RECREATION SITES, TRAILS, AND INTERPRETATIVE FOREST SITES

Prepared by
Ministry of Forests

April 13, 2000

Forest Recreation Sites, Trails and Interpretative Forest Sites

The Program

The Ministry of Forest (Ministry) manages recreation resources and their public use on Crown forestlands. Managing the recreation resource involves:

- Maintaining an inventory of recreation features and recreation settings,
- Planning for recreation, and
- Incorporating recreation information into referrals for operations proposed on Crown forestlands.

The Ministry manages more than,

- 1,400 recreation sites (campgrounds),
- 500 recreation trails, and
- 50 interpretative forest sites.

Program Funding

Up until 1997 funding for recreation remained relatively constant with an operating budget of approximately $4.0 million per year.

In 1997 things began to change:
FRBC completely funded the management of Forest Service campgrounds and trails. Staff Salaries continued to be funded under Ministry base allocations.

In 1998 the Ministry base funds for staff salaries continued, but no funds were made available for managing the campgrounds and trails. Campgrounds began to deteriorate resulting in escalation of public and media complaints. The Ministry allocated $1 million to keep the campgrounds open; there were no funds to manage trails.

In 1999 few resources were committed to managing the recreation resource. **Recreation fees** at campgrounds and some trails were introduced to help recover some of the costs of maintaining the sites and trails. The revenue from the recreation fee combined with some limited Ministry funds enabled the Forest Service to keep the campgrounds open.

Recreation Fees

The introduction of recreation user fees represents a significant change for both the public and the Forest Service. To increase the revenue from the camping fees the Ministry is advertising and promoting the Forest Service campgrounds and trails. As a result more and more people are discovering them.

To date, revenue from recreation fees and funding from government have not been sufficient to manage the campgrounds to Ministry standards. Unfortunately, the lack of funding has resulted in service at the campgrounds remaining at below standard levels,

approximately ½ of previous years. Compounding this problem is a higher public expectation of service and facilities at the campgrounds now that fees are being charged.

In addition, considerable variation exists across regions and districts on the types of structures and services provided at Forest Service campgrounds. This variability makes it difficult to clearly present to the public what they are purchasing when they buy a camping pass. The Resource Management Plan is poised to provide this information for the program.

Resource Management Plan - Recreation Component

Resource Management Plans (RMP) are similar to ***Recreation Program Management Plans*** that have been used in the recreation program (see chapter 4 of the Recreation Manual).

RMPs provide the Ministry Operations Division and other potential funding sources with information for priorizing recreation site and trail management activities. They will also form the corporate business plan at the provincial level.

The RMP will incorporate both ***recreation resource management*** and ***use management***. Recreation inventory is included in the Inventory component of the RMP; and therefore is not included in the Recreation component.

The purpose of the RMP for Recreation is to:

1. Identify **objectives and priorities** for
   - recreation resource management; and
   - site and trail management.

2. **Revenue**: Identify forecasted revenue from recreation fees.
3. **Expenditures**: Identify funding requirements for managing recreation sites and trails.

4. **Recreation investment opportunities**: recommend potential strategic investment to meet their Forest Renewal BC strategic objectives.

5. **Budget**: Assist in the budget development and allocation process by providing:
   - Branch and region resource focus, and
   - Treasury Board submission background documentation.

6. **Tracking**:
   The RMP will provide information to determine,
   - funded and completed activities to support **performance targets** and
   - associated **ramifications** for unfunded resource activities.

Target audience

The RMP is intended to provide resource needs and priorities for the following:

- Ministry/FRBC executives

- MoF region and district managers and FRBC regional directors
- Other potential funding sources

Clearly State the Recreation Opportunities Managed by the Ministry

Given the lack of funding, newly introduced user fees and higher public expectations, it is critical that the RMP build the business case for focused recreation opportunities provided by the Ministry. The business case for recreation will result from the following analysis:

- **Design Levels.** Develop a series of provincial design levels and standards for Forest Service campgrounds and trails (dependent on use levels, recreation activities and other criteria).

For those interested in the design phase, contact Bill Marshall, (250) 387-8382, Bill.Marshall@gems5.gov.bc.ca, who is leading the working group.

- **Inventory.** Update the inventory of campgrounds and trails.

- **Apply the Design Level.** Identify the design level that each campground will be managed to.

- **Plan to Design.** Develop a plan for each campground and trail to repair, replace or remove structures to meet the appropriate design.

- **Set Maintenance Levels.** Identify maintenance services required to manage the campgrounds and trails.

- **Plan the Business.** Develop a business plan for managing a consistent network of campgrounds and trails that incorporates the revenue from recreation fees with funding requirements from government that meets pubic safety, environmental and social concerns.

- **Plan Staff Commitments.** Commit a portion of staff time and resources to managing recreation resources to protect recreation resources for future generations.

RMP Data Template

The data template applied and completed consistently across the province will provide sufficient information to allow

- the target audience to understand the resource needs and priorities,
- provincial summary of resource activity priorities for the coming year,
- resource needs to be identified for the following two years,
- development of business plans,
- risks to be identified,
- tracking of forest management activities, and
- reporting on strategic goals, objectives and performance measures.

RMP Written Portion

The written portion of the RMP should discuss and rationalize the activities that have been identified in the component template.

RMP Recreation Activities and Priority Ranking Criteria

Each RMP component must have guidelines that include objectives and criteria around eligibility of activities. The guidelines for recreation resource management will be completed over the next few months. The following are draft recreation site and trail activities and priorities:

For Recreation Sites and Trails

Critical **Maintenance**

- Obligatory maintenance activities that if not carried out will lead to
  - significant public safety risks,
  - environmental damage,
  - liability and possible court action, or
  - widespread adverse publicity.

High **Structure repair and replacement**

- Essential repair and replacement of structures that must be carried out in order to protect and maintain the Ministry 's $12 million plus investment at Forest Service campgrounds and trails.

Moderate **Rehabilitation**

- Activities required for monitoring and evaluating the condition of Forest Service campgrounds and trails; and planning and carrying out rehabilitation at Forest Service campgrounds and trails.

Low **Development**

- Improvements that will enhance forest recreation opportunities for the public.

Forest Service Campground and Trail Management Activities
For the 2001/02 Resource Management Plan

Management Unit: (e.g. TSA 25) **Region:** (e.g. RVA) **District:** (e.g. DQC)

Campgrounds: Number and Funding Needs by Category

	Sign and toilet only		Some Tables and Fire Rings		Full Complement of Facilities at each Campsite		Enhanced: Full Time Operator				Priority[1]
Activity	A		B		C		D		**Total**		C H M L
	#	$'s	#	$'s	#	$'s	#	$'s	#	$'s	
Maintenance									0	0	
Repair/Replace Structures									0	0	
Rehabilitation									0	0	
Development									0	0	
Total	0	0	0	0	0	0	0	0	0	0	

Campsites and Trails Three Year Plan

Activity	**2001/02**	**2002/03**	**2003/04**
	$'s	$'s	$'s
Maintenance	0		
Repair/Replace Structures	0		
Rehabilitation	0		
Development	0		
	0	0	0

Trails: # and $'s

	#	$'s	Priority[1] C H M L
Maint.			
Repair			
Rehab.			
Develop			
	0	0	

[1]Priority is critical, high, moderate or low

Issue (number)[7]	Project number and name	Project Status (E or N)[8]	Type of Knowledge Investment[9] (E, U, N)	Type of Benefit[10] (E, T, NT)	Scope of Benefits[11] (# of Mus, R, P)	Timing of Benefits (S or L)[12]	Ability to use knowledge[13] (List all)	Timing -- when is project completion required?	Prob. of success?[14] (H, M, L)	Potential source of funding[15] (RIP, RE, HIP, CLUPE)	Investment to date ($$)	Investment to date (Years)	$ req'd 2001/02	$ req'd 2002/03	$ req'd 2003/04	$req'd 2004/05	Total[16] $	#Total of years required to complete (include # years to date)

[7] Each issue and project should have a unique identifier.

[8] E = Existing N = New

[9] Type of knowledge investment categories: E = (Organization, Synthesis, Analysis of Existing Info), U = (Tools, Applications, Extension to Enhance Use of Existing Information) N = (Field Inventory or Research)

[10] Reduction of risk to: (E) environmental values (T) timber resource benefits (NT) nontimber resource benefits. There may be more than one type of benefit.

[11] # of Mus, R = Region, P = Province

[12] S = (short-term/less than 5 years) and L = (longer-term)

[13] Strategic decision process or implementation of plans: SLUP (i.e. Regional, LRMP), TSR2, TSR3

[14] H = proven techniques, L = unproven technique, methodology

[15] Potential sources of funding: RIP (Regional Investment Plan), -RE (Research Program), HIP (Forest Renewal HQ Investment Plan), CLUPE

[16] Include existing investment in total.

Section 2.9

GUIDELINE FOR FOREST RENEWAL BC
SUSTAINABLE HARVEST COMPONENT

Prepared by
Ministry of Forests in cooperation with
Ministry of Environment, Lands and Parks and
Forest Renewal BC

February 23, 2000

Excel Tables for Use with this Document

"00 02e SH tables.xls"

Silviculture Information Access (ISIS-SIA) Reports are available at
http://www.for.gov.bc.ca/hfp/pubssilvstrat.htm

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Executive Summary

This Forest Renewal BC, Sustainable Harvest (SH) Component guideline provides advice to staff completing the Forest Renewal BC, SH Component of Resource Management Plans (RMPs) for the 2001/2002 planning year. The guideline facilitates incremental improvement on the RMPs completed for the 2000/2001 fiscal year.

RMPs identify priorities and opportunities for silviculture investments. Within the context of regional RMP priorities, government agencies and industry work collaboratively to identify objectives, priorities and actions to achieve desired forest conditions.

RMPs are completed on a management unit basis, specifically, Timber Supply Areas (TSA) and Tree Farm Licences (TFL). For TSAs, activities are selected leading to the forest conditions that will bring the greatest common good. On TFLs, licence holders, guided by the MoF and MELP, identify objectives, priorities and actions to achieve desired forest conditions. Woodlot licenses may be included as one accumulated "management unit" at the regional level.

The SH objective includes enhanced forestry, backlog reforestation and studies related to sustainable harvest. Enhanced forestry includes stand tending, forest health enhancements, biodiversity maintenance and habitat enhancements. Sufficient detail regarding SH activities is provided in RMPs to ensure that subsequent documents are properly guided and aligned to address priorities.

The RMP process also generates a set of operational study priorities related to sustainable harvest for funding consideration. Operationally important trials are developed and investigated through studies.

The Ministry of Forests is the lead agency for the SH component. The MoF Regional Forest Sector Initiative Managers (FSIMs) coordinate the submission of the Regional RMPs to Forest Renewal BC. MELP staff provide information regarding the conservation of habitat and biodiversity, and opportunities for restoration or treatment for the consideration of those involved in the planning process.

Standard reporting formats included in this document facilitate summarization of activity and funding opportunities, and allow comparison across management units and regions. Regions summarize the management unit RMPs tables into Regional RMP tables. Regional tables are summarized provincially to inform decision-makers and the public on proposed land base activities. Where available, regional strategies are provided in the RMP to provide regional resource management priorities across Management Units.

This guideline has been improved based on feedback received. Highlights of improvements over last year's document include:

- Identified the need for a regional (and provincial) silviculture strategy for priorities across management units.
- Increased emphasis on FRBC performance measures and inclusion of a performance measures table.
- Clarified habitat as an activity and as a performance measure.
- Reduced the required number of tables.
- Included site restoration in backlog reforestation.
- Required regional summarization of management unit tables.
- Identified high priority and medium priority activities for funding.
- Provided for a separate list of study projects for independent consideration.
- Removed Current Fire and Pest and Forest Health Maintenance into a separate guideline.
- Allowed for a regionally developed woodlot RMP.

Acronyms for Forest Renewal BC Objectives used in this document.
SH: Sustainable Harvest Component
EEV: Enhancing Environmental Values Component
SSFM: Strengthening Sustainable Forest Management Component

Sustainable Harvest Component of the RMP

The objective of Sustainable Harvest is to,

- Increase the volume, economic value, and health of second-growth forests;
- Maintain or enhance habitat supply and long-term biodiversity of second-growth forests;
- Increase the amount of land available for commercial timber production; and
- Support more-informed silviculture investment decisions.

Forest Renewal funding is primarily concerned with second growth forests. There are exceptions such as old forests managed for open canopies where caribou winter foraging is a primary concern.

The purpose of this guideline is to ensure,

1. Strategies and programs are in keeping with the legislative mandate of the *Ministry of Forests Act* and the *Ministry of Environment Act*;
2. Sustainable resource management strategy, objectives and priorities form the basis of plan development;
3. The approach in planning the Sustainable Harvest Objective is consistent; and
4. Information gaps and shortcomings are identified for the Strengthening Sustainable Forest Management (SSFM) Component.

Sustainable Harvest Planning

MoF and MELP staff complete the Strategic Harvest (SH) component of the RMP for the Forest Renewal BC business planning process under the *Multi-Year Agreements (Services)* between the ministries and Forest Renewal BC. The guideline for the Forest Renewal BC, Sustainable Harvest (SH) Component provides advice to staff completing the Forest Renewal BC, SH Component of Resource Management Plans (RMPs) for the 2001/2002 fiscal year. The guideline facilitates incremental improvement on the RMPs completed for the 2000/2001 fiscal year.

The Sustainable Harvest component was well received at planning unit meetings in the 2000/2001 fiscal year. The intent of the RMP recommendations appears to be largely accepted and implemented. Success in Nelson Region for example, was based on,

- FRBC providing preliminary allocations by Management Unit.
- TSA needs based on Type I or Type II silviculture strategies with full licensee participation.
- Management Units dedicated a portion (80%) of their funding levels up front.
- The regional steering committee allocated the remainder based on new information and clarification of FRBC principles and targets.

Roles and Responsibilities

Roles and responsibilities are similar to the 2000/2001 fiscal year. The MoF Regional Forest Sector Initiative Managers (FSIMs) coordinate the submission of the Regional RMPs to Forest Renewal BC. The MoF with MELP and industry involvement will implement the resource management planning process outlined in this document.

The following is suggested to assist operational staff in jointly developing RMPs in 2001/2002:

1. The Regional RMP is to be completed with the full involvement of licensees.
2. The district-level resource management planning process will identify forest management priorities.
3. Where completed, the activities and priorities should be based on Type 1 or Type 2 silviculture strategies. Otherwise, MoF, MELP and licensee staff should contribute information on the opportunity for silviculture activities at the management unit level.
4. MELP staff are also involved at the regional level as described as follows:

<u>The regional MELP contact person will:</u>

1. Determine the level of involvement of MELP staff within the region.
2. Provide information on
   a) existing habitat/wildlife/biodiversity strategies including examples such as:
      - Identified Wildlife Management Strategy,
      - BC Grizzly Bear Conservation Strategy,
      - Spotted Owl Management Strategy, etc.

   b) specific habitat needs (e.g., strategies for mule deer, caribou, grizzly bear, etc.), and general ecosystem level needs and strategies (e.g., risk assessment, landscape unit planning shortfalls for old-growth, etc.), and
   c) other information collected or maintained by MELP.
3. Provide interpretation of habitat supply and biodiversity objectives in higher level plans.
4. Recommend general preferred geographic locations for treatments by management unit.
5. Assist in identification of information needs to be integrated with SSFM initiatives.
6. Recommend Habitat Supply Enhancement and Biodiversity Maintenance Activities to be included in the Enhanced Forestry Table.

Regional RMP Requirements

The Regional RMP is a continuously evolving document that is consistent with higher level plans and strategies developed within management units and the region.

The RMP:

1. Is developed at the management unit level (TSA and TFL) and consolidated at the district, region, and provincial levels in a bottom-up approach;
2. Is developed with full involvement and general consensus from licensees;

3. Meets MoF/Forest Renewal BC Services Agreement requirements for stakeholder participation;
4. Incorporates Innovative Forestry Practices Agreement (IFPA) requirements where applicable (e.g., eligibility criteria); and
5. Is developed for woodlot licencees using 3-year Opportunity Plans developed and consolidated in 1998/99 at the regional level.

Considers:

1. TSA, TFL and woodlot licence objectives and priorities;
2. Type 1 and Type 2 silviculture strategies and other existing strategies; and
3. Integrated resource objectives found in higher level plans.

Activities:

1. Identifies a set of priority operational silviculture opportunities;
2. Lists requirements to keep the land base fully stocked with free growing trees in accordance with forest stewardship plans;
3. Estimates the effects of activities on anticipated outcomes as measured by the specified performance indicators;
4. Provides a table of funding requirements for investment opportunities; and
5. Identifies opportunities for habitat enhancement and maintenance of biodiversity values.
6. Regional summary tables should also be provided that role up the management unit activities for the region.

Regional Strategies:

1. Regional silviculture strategies should be in the regional RMP.

Regional strategies are developed through region-level processes. Once in place, regional strategies give context to influence a balance of resource management priorities across units, some units compensating for others to achieve regional and provincial objectives.

RMP Limitations:

1. Is based on best available information at the time of the plan; and
2. Considers the constraints to annual accomplishments (constraints may include ownership, administration, legislation, regulations and industry's ability to implement).

Management Unit RMP Information Requirements

For each management unit, the RMP provides a description of the existing timber supply, timber quality issues, habitat supply issues and biodiversity maintenance, and the silviculture investment program recommended along with rationale. The following is the basic information requirement:

- Basic Management Unit Information

- Incremental Silviculture History
- Supporting Evidence for proposed FRBC investments:
    1. Improved forest cover
    2. Increased Timber Supply
    3. Improved Timber Quality
    4. Habitat supply and biodiversity maintenance
- Opportunities to achieve FRBC Performance Goals
- Working Targets and Job Outcomes
- References

Where possible, the RMP needs to link and flow from the silviculture strategies. Planning will be enhanced in the current year as the number of silviculture strategies available on management units has increased. These analyses, in consistent format, improve the ability to rationally suggest resource priorities between management units.

Where Type 1 or Type 2 silviculture strategies have been completed, provide the location of the strategy on the Internet, or provide a digital copy of the strategy. In the RMP itself include the tables referenced and highlight the information used in the development of the summary tables. An example of the type of table needed in the RMP is provided at the end of this section.

The RMP should also capture information gaps and weaknesses that impact upon silvicultural strategy decision making (may be sensitivity or confidence related) to provide a linkage to studies/research and the SSFM objective.

See Attachment 1 for more detailed information on Management Unit RMP Requirements.

Activities in the RMP

Planned activities must (see Attachment 2):

- be consistent with,
    - acts, regulations, guidelines and priorities set in higher level plans;
    - the government's goals; and
    - the MoF's guiding principles for silviculture;
- be developed within the context of the *Incremental Silviculture Strategy for British Columbia (interim)*;
- consider riparian, biodiversity and habitat issues;
- include activities that maintain or enhance sustainable forest biodiversity and habitat priorities;
- result in no expected loss of investment due to fire, forest health issues, or alienation of land;
- have reasonable cost estimates within the cost caps provided; and
- include activities that fit within FRBC strategic or operational commitments.

Here is an example of a Regime Table from a Silviculture Strategy that is to be included with the RMP when referenced.

Regime Table, Strathcona TSA, July 1998

Regimes	Strategy	Opportunity Area (Ha/Yr)	Timber Supply Effects			Quality	Habitat			Direct Silv. Jobs Days/ha	Direct Cost $/ha	Rank[1,2]		
			Short	Medium	Long		OG	Riparian	Wildlife			S	K	L
1 **Backlog Brushing**		100	0	0	0	0	0	0	0	1	1000	na	3/2	3/1
Spacing														
CT Regimes (Sayward @ 10 - 12 yrs)														
2 Fd M-G sites >1600 to 900 (2 entry CT)	ST3, MT4, LT1	100	0	++	0	+	++	0	+	2.5	900	2/2	na	na
3 Fd M-G sites >1600 to 750 (1 entry CT)	ST3, MT4, LT1	100	0	++	0	+	++	0	+	2.5	900	2/2	na	na
non-CT Regimes														
HB,HF/HC M-G sites, 3-5000 to 750-1000														
4 Kyuquot	MT1	1000	0	++	0	+	0	0	+	4	1300		2/1	
5 Sayward	LT1	200	0	++	0	+	0	0	+		900	3/3		
6 Loughborough	MT2	100	0	++	0	+	0	0	+		1600			3/1
7 Habitat	H2	50	0	0	0	0	+	+	++	2.5	1600	3/3	3/3	
Pruning														
8 Fd M-G spaced stands (Sayward) 2nd lift	Q1	200	0	0	0	++	0	0	+	10	1350	4/4	4/5	
9 FdHw M-G spaced (Kyuquot) 2nd lift	Q2	50	0	0	0	++	0	0	+	10	1350	4/4	4/5	
Fertilization														
Fd M-G /CT age 40-50														
Fd M-G /spaced, no CT, age 40-50														
Fd M-G /spaced, no CT, younger ages														
10 Sayward	ST3	1300	++	++	+	0	+	0	0	.1	275	1/1[3]		
11 Kyuquot	MT1	200	++	++	+	0	+	0	0	.1	275		3/3	

Notes

1 Rank S=Sayward, K=Kyuquot, L=Loughborough

2 General ranking: H = 1 & 2; M = 3; L = 4 & 5

3 n/m: n is TSA rank, m is supply block rank

Enhanced Forestry Program

Enhanced forestry can make a significant contribution to the economy of British Columbia and increase future options for sustainable forest management. Through enhanced forestry, Forest Renewal BC will invest in the production of faster-growing, higher-quality stands of second-growth timber on lands available for timber production.

The enhanced forestry table is to be completed for each management unit. ISIS onetime SIA reports are available to complete these tables. For report generation instructions, see http://www.for.gov.bc.ca/hfp/pubssilvstrat.htm

Program	Description	Activities
Stand Tending	Silvicultural treatments to free growing stands to enhance their value, volume, biodiversity, habitat supply and/or health.	Spacing, pruning, fertilization and associated surveys and prescriptions.
Forest Health Enhancement	Activities to improve the economic value of the forest resource by reducing the incidence and impact of root rot diseases, dwarf mistletoe, terminal weevils and stem rusts.	Pop-up treatment for root diseases; prune larch seed-trees to reduce mistletoe spread; sanitation spacing for rust and mistletoe infected pine stands; rehabilitate chronically infested root disease and dwarf mistletoe sites. Prune white pine to protect trees from blister rust infection and lodgepole pine for stem rusts.

Funding Priority

Where available, provide the Summary Regime Table from the Type I or Type II silviculture strategy to justify a high funding rating. Total funding request included in the table should only include high and medium priority activities. Where there is an absence of forest level strategic silviculture analyses for a management unit, the following are considered general priorities:

High Priority

- Activities that contribute to maintaining current harvest levels and to minimizing the anticipated interim shortfall in timber supply. (Includes activities that promote faster development of old growth attributes and habitat/ biodiversity values that may be limiting timber supply in the mid-term.)
- Protecting second-growth forests from insect epidemics and disease.
- Activities that positively contribute to a continuous supply of habitat for red-listed and blue-listed species and regionally significant wildlife.

Medium Priority

- Stand tending to increase the merchantable volume and/or value of long term timber supply.
- Stand tending and pruning to enhance the seral stage distribution and structure of the forest.
- Also consider forest health enhancement activities where these offer greater returns on investment than other incremental silviculture activities or treatments that enhance general biodiversity and habitat supply and biodiversity values versus habitat supply for specific targeted species.

Low Priority

Activities that do not fit within strategies or address interim provincial timber supply objectives are a low priority. Stand tending plans should be consistent with any regional silviculture strategies, TFL and TSA plans Type 1 or 2 strategies, and landscape unit strategies.

Stand tending is also a low priority where the security of investment is questionable because of land alienation, pests, etc. Stand tending plans should recognize the potential impacts of forest health agents that could jeopardize the treatment's objectives. Recognition includes potential risks, known hazards and the potential need for surveys. Stand tending is a low priority in high pest hazard areas unless a prescription shows that the incidence is acceptable based on the results of a formal pest incidence survey (method approved by the district or regional forest health specialists.

Silvicultural projects for timber supply need to be assessed for impact to the environment, with preference in investments to projects that are neutral or beneficial to maintaining environmental values in the short and long term. This assessment may only be possible initially through qualified professional judgements.

Stand Tending Guidelines

Introduction

This section provides direction on how to develop a program for stand tending activities. Eligible activities include spacing, fertilizing, pruning and associated planning, surveys and prescriptions.

Objectives

Initiatives to develop regional silviculture objectives and strategies are at various stages of completion throughout the province. Districts should refer to the draft MoF Incremental Silviculture Policy (January 1995) which states:

> *The Ministry policy is that incremental silviculture programs will be used to manage forests beyond the free growing stage, to meet the sustainable economic, social and environmental objectives of the people of British Columbia. These objectives will be met by improving forest health, stand value, wildlife habitat, wood flow, and employment opportunities within provincial forests. Incremental silviculture will be appropriately used to produce desirable products and resource values at the times and in the quantities desired.*
>
> *TSAs and TFLs should have goals and objectives for incremental silviculture stated in management plans prior to carrying out any treatments. The management plans should illustrate how the proposed incremental program meets local economic, social and environmental objectives.*
>
> *Incremental silviculture projects should:*
>
> - *Be on areas that are free growing, or if there is no legal free-growing obligation they should meet the free-growing definition;*
> - *Improve biological, economic or social values; or*
> - *Yield a positive financial return except when necessary to fulfill wood flow, Integrated Resource Management or social planning objectives.*

Guidelines

Stands can be considered for incremental treatments if they meet the following eligibility guidelines:

1. Operational projects should not be considered when single entry, single activity costs exceed the following:

Area	Spacing* ($/ha)	Fertilizing* ($/ha)	Pruning* ($/ha/lift)
all Vancouver Region	2 000	300	1 500
high site index stands (coastal portions) of Kalum and North Coast forest districts			
All other areas	1 000	300	1 200

* These values represent upper limits for treatment costs; district average treatment costs should be lower.

2. Areas planned for spacing should have clear timber and non-timber management objectives.
3. Rate site based on professional judgment for the biological, economic and forest level benefits of the spacing treatment.
4. Good sites have the highest priority for pruning (see the pruning guidelines).
5. Medium sites have the highest priority for fertilization.
6. Stand tending is a low priority in forests with high health hazard unless the prescription shows the incidence is acceptable based on the results of a formal pest incidence survey.
7. Certain areas may be targeted for habitat supply enhancement and biodiversity values, to help prioritize the favored location for treatments.
8. Specific goals for habitat and biodiversity, including dollars, activities, and hectares for habitat supply/biodiversity improvement should be included in the plan.

Deviations from these guidelines may occur, providing incremental silviculture activities will be directed towards meeting landscape unit, TSA, TFL, Type 1 or 2 strategies and regional objectives.

Where average district costs are proposed to be higher than these document the rationale for the higher costs in the RMP (e.g. due to Forest Renewal BC social objectives).

Forest Health Enhancement Guidelines

Forest Health Enhancement activities are those activities carried out on **second growth** stands intended to improve or enhance forest health conditions. Forest Renewal BC is committed to fund forest health ***enhancement*** activities (activities which enhance the value of the forest resource, such as reducing the incidence of root rot), but not *forest health maintenance* activities (activities which protect timber from insects and disease, such as the control of bark beetles). The following is a list of some of the types of treatments that may be considered for inclusion in Forest Health Enhancement:

- Rehabilitation of chronically infested sites with root disease, dwarf mistletoe
- Pruning for white pine blister rust
- Pop-up treatment for root diseases.
- Pruning of seed trees to reduce mistletoe spread
- Sanitation spacing for rust and mistletoe infected stands
- Other

The category *other* is only for operational goals and associated funding. Do not include research or operational trials. (No salvage may be associated with any activity as it would be considered a subsidization and therefore ineligible.) Use the following flow chart to evaluate which activities are eligible:

Forest Renewal BC Forest Health Eligibility Guide

Test as Follows

1. Is it tied to a legislated commitment?

IF PARTIALLY OR NO

IF YES
NOT FRBC FUNDED

2. Is it consistent with FRBC's strategic objectives and business areas?

IF YES

IF NO
NOT FRBC FUNDED

3. Does it fall into a resource priority area under the resource management plan?

IF YES

IF NO
NOT FRBC FUNDED

4. Is the activity of an inventory or survey nature?

IF YES

IF NO

5A Is the proposed work at a scale of 1:100,000 or greater?

IF YES

IF NO
NOT FRBC FUNDED

5b. Is it being conducted within a second growth forest?

IF YES

IF NO
NOT FRBC FUNDED

6a. Will it benefit more than one forest estate user?

IF YES

IF NO
NOT FRBC FUNDED

6b. Is it being conducted within a high hazard forest ecosystem?

IF YES

IF NO
NOT FRBC FUNDED

7. Do the returns on investment with respect to this activity meet the economic, social, and environmental objectives of FRBC's mandate?

IF YES

IF NO
NOT FRBC FUNDED

8. Would the activity happen anyway?

IF NO or questionable

IF YES
NOT FRBC FUNDED

9. Can or should the activity be cost-shared?

IF YES
PURSUE COST

IF NO
FUND

Habitat Supply and Biodiversity Guidelines

Projects aimed at maintaining habitat and biodiversity into the future must be applicable to a management unit level. Opportunities are identified at the management unit level, and then considered in context of environmental needs within the region. Ideally, these would be based on an assessment of environmental indicators in the management unit and emphasize projects considered in a regional environmental context.

Planning for habitat supply and biodiversity objectives for immature, second growth and old forests should cover the entire planning unit area. However, the information and data required for setting resource objectives and targets may only be available for a portion of the planning unit. Where information is lacking, the knowledge gaps should be identified and discussed with the stakeholders developing the RMPs, and incorporated in supporting RMP planning (e.g., studies, SSFM projects).

MELP involvement occurs at the regional and forest level for Type I and Type II silviculture strategies and other similar stewardship plans. Involvement can include an assessment of environmental indicators and/or the development of projects at specific locations. To be effective, the necessary structure must be present in MELP to enable a clear message that habitat and biodiversity issues should be addressed at the management unit level.

Objectives

Reference resource objectives to existing higher level plans, legislation or policy, for example, Forest Act, Forest Practices Code Act, and/or specific strategies, for example, Identified Wildlife Management Strategy, Grizzly Bear Strategy. Where possible, MELP staff should specify the resource objectives for habitat supply and biodiversity with specific references to the specified performance indicators.

The eventual goal is to have measurable targets with quantifiable objectives for habitat supply and biodiversity for management units. In the absence of this specific information, link objectives to existing plans and strategies. As information becomes available, the targets can be quantified.

Guidelines

1. MELP staff should provide planners with maps and information regarding both ecosystem and species level habitat strategies to consider in the management unit. The level of detail provided depends on local knowledge. Districts and regions with more advanced Landscape Unit planning processes will be better prepared to assemble and incorporate environmental information.

2. MELP staff should set realistic EFP habitat/biodiversity targets that reflect how to sustain species and ecosystems based on local environmental knowledge, management priorities and forest conditions.

3. Specify the areas and treatments where habitat values might be unduly compromised if treated to augment timber supply (i.e. describe the site/landscape conditions that should be avoided for certain activities, or the silvicultural approach that could mitigate a treatment).

4. Provide information to help plan silvicultural activities to avoid critical timing windows for wildlife (i.e. fish spawning, raptor nesting, important spring range use areas, etc.).

5. In management units where silvicultural regimes were developed in Type 1 Silvicultural Workshops, identify information on specific habitats that may influence the type, timing or location of enhanced forestry projects. This information should be communicated to multi-year or annual agreement holders. Where possible, general guidance of this nature can be included in the RMP. The extension of this knowledge must be fully communicated to those actually carrying out treatments on the ground. Where more specific strategies have been developed (e.g.: Type 2 analyses), results should be reviewed in the context of environmental effects through consultation between stakeholders and MELP.

6. The preparation of individual project prescriptions, Backlog Silviculture Prescriptions, Stand Management Prescriptions, and Silviculture Standards Agreements should reflect stand structural goals or management practices needed to accommodate desired habitat conditions into the future.

7. Use the Enhanced Forestry Table to document silviculture activities that should be implemented for the primary objective (i.e. the #1 ranked objective) of maintaining or restoring habitat or biodiversity.

Backlog Reforestation Program

FRBC will put more lands not yet growing healthy commercial forests into timber production. Working target to bring the Backlog Program to a successful conclusion is:

By March 2002, for all backlog sites,

1) **Accurately identify and categorize all stands as Not Satisfactorily Restocked (NSR), Satisfactorily Restocked (SR) or Non-Productive (NP).**
2) **Put under prescription all NSR sites that will be treated to bring them to SR.**

With this target in mind, complete the backlog table for the management unit.

Program	Program Description	Activities to Achieve the Program Goals
Backlog Reforestation	Activities applied to backlog NSR and impeded areas with the objective of improving timber growth, yield, and value on these sites.	Site preparation, planting, brushing and associated surveys and prescriptions.
Site Restoration	Specific silviculture activities applied in watersheds to stabilize land or soil, bring land back into a productive state for timber production, and restore or enhance riparian management zone conditions.	Rehabilitation and reforestation of roads, riparian management zone reforestation, and stand tending activities.

Note that site restoration is included in the backlog program. The backlog table allows for site restoration under backlog reforestation.

The backlog program consists of:

1) **Legal Obligations** - required treatments to achieve obligations on backlog areas under silviculture prescriptions where the commencement date has been initiated.
2) **Backlog Reforestation** - required treatments on backlog NSR areas where a silviculture prescription is not required, or the commencement date has not been initiated.
3) **Impeded areas** - sufficiently stocked areas require further brushing to reach free growing, and timber was harvested, damaged, or destroyed before October 1, 1987.
4) **Site Restoration** – includes fill planting, rehabilitation of poorly performing stands and any site rehabilitation, planting and brushing activities on roads and landings.
5) **Total** - summary of the above categories for the management unit.

Funding Priority

Priorities may be set in Higher Level Plans. In the absence of such priorities, prioritize based on the Ministry of Forests Backlog Management Policy as follows:

High Priority

(i) Legal obligations - backlog areas under silviculture prescriptions

- Complete required treatments to achieve obligations on backlog areas under silviculture prescriptions where the commencement date has been initiated.

(ii) Impeded areas - Satisfactorily Restocked (SR) - pre- October 1, 1987

- Conduct appropriate surveys or brushing treatments to protect existing investments by ensuring impeded areas remain **Satisfactorily Restocked** (SR) and achieve desired objectives and obligations.

(iii) Backlog areas - January 1, 1982 to September 30, 1987

- Conduct assessments and field surveys to establish baseline information to determine status and rank, if appropriate, for developing Backlog Silviculture Prescriptions.

- Complete all site preparation and planting on good and medium sites that are below minimum stocking; harvested areas have priority over natural disturbances.

(iv) Backlog areas - pre - January 1, 1982

- Identify good and medium sites first,
identify poor and low sites, and
confirm that indicated site productivity is correct.

- Conduct assessments and surveys to establish baseline information to determine where to develop Backlog Silviculture Prescriptions.

- Complete site preparation and planting on good and medium sites. Harvested areas have higher priority than natural disturbances.

Medium Priority

On going review of the current status of each backlog or impeded area will establish whether the area:

a) Requires further treatment, including surveys;
b) Will not be further treated; or
c) Requires assessment of non-timber resource values.

After such review, provide an accurate inventory label and volume adjustment factor, if required, for those areas that will not be further treated.

Constraints to consider

1. Suitable road access must either be in place, or require only minor upgrading unless the total construction costs can be justified relative to the potential benefits. Refer to the Forest Development Plan.
2. Forest health concerns should be addressed when determining silviculture treatments for each opening.
3. The cumulative cost of all brushing treatments should not exceed $1500 per hectare. Where average district costs are proposed to be higher than this, document the rationale for the higher costs.
4. Biodiversity must be considered when determining actual treatments and extent and pattern of projects across the landscape (consult MELP representative).
5. For pre-1982 obligations, areas where the average age of well-spaced stems is less than 12 years and stocking exceeds existing minimums for the ecosystem association the area should not to be scheduled for planting (Reference: *Establishment to Free Growing Guidebook*).
6. Stands should be considered satisfactorily restocked where the average age of well-spaced stems is 12 years or greater and the number of well-spaced stems is 60% of the Guidebook minimum's. However, this is a guideline only. Districts should consider blocks individually before applying this reduced stocking standard.
7. Forest Renewal BC does not fund backlog areas that are the responsibility of a licencee as a forest management obligation under a licence.

Site Restoration under Backlog Reforestation

Backlog reforestation can also include opportunities for fill planting, rehabilitation of poorly performing stands and any site rehabilitation, planting and brushing activities on roads and landings that are proposed to be restored under the Sustainable Harvest Objective.

Fill Planting

Fill planting enhances fibre flow by improving marginally stocked areas already declared free growing. Similarly, a number of small, salvage-harvested areas are not currently reforested within a normal regeneration time frame. The prescription holder is "exempt" under the regulations from this obligation. Usually less than 1 ha in size, these areas will eventually reforest themselves naturally over a longer period of time. They will have variable stocking and potentially less desirable species for silvicultural purposes. Consult MELP representative when choosing areas for fill planting in poor or medium sites.

Planting some areas "lost" in the system of forest administration will aid in the reduction of regeneration delays on a small portion of the land base. In some cases, reduction of voids could

1) bring stand production to the yields projected by managed stand yield curves and
2) maintain or enhance long term timber harvest.

This treatment is not feasible in stands where the fill-planted trees will not reach a merchantable size by harvest; the treatment would be unproductive from a timber harvest perspective. The cumulative cost of fill planting must not exceed $1,000 per hectare. Where average district costs are proposed to be higher than this, document the rationale for the higher costs.

Rehabilitation of Poorly Performing Stands

Rehabilitate poorly performing stands that will not provide an acceptable future crop. Many stands were planted with species and/or seeds that are performing poorer than expected due to genetic maladaptation, forest health problems and other causes. Long term chronic problems of poor growth, poor form, and growth losses or mortality from forest health factors are increasingly evident. In addition, growth models indicate a potential to substantially increase future volume and value by converting some stands to more suitable species or seed provenance. The rotation length of the new stand may be less than the current stand, and net present value is often higher even with the re-establishment costs.

Treatments may involve a complete regime similar to that required on backlog NSR sites, or may simply involve removal of the unsuitable stems (by cutting, girdling or similar method) to release smaller natural regeneration. The cumulative cost of rehabilitation of poorly performing stands must not exceed $2,000 per hectare. Where average district costs are proposed to be higher than this, document the rationale for the higher costs.

Road, Landing, Hillslope and Riparian Reforestation

Where conditions permit, rehabilitate roads and landings to restore forest productivity. There may be some limited opportunities to increase the productive forest land base by reforesting roads, landings, hillslopes and Riparian Management Areas in conjunction with the watershed restoration program.
Reforest RMZs in conjunction with Riparian Reserve Zone (RRZ) restoration, to ensure resource objectives are met for the entire Riparian Management Area. (See Riparian Management Area Guidebook, 1995 and updates.)

Undertake this activity only when:

- there is reasonable assurance of achieving an acceptable level of forest productivity;
- the trees on the rehabilitated area (e.g., Riparian Management Zone (RMZ)) will reach merchantable size in time to be harvested with the surrounding timber;
- the cost is not covered under the Enhancing Environmental Values Component; or
- biodiversity value can be clearly identified and documented.

The cumulative cost of Road, Landing, Hillslope and Riparian Reforestation should not exceed $1,500 per hectare. Where average district costs are proposed to be higher than $1,500, document the rationale for the higher costs. (Another option is to require the

RMP to formally include a locally developed cost cap and has supporting analysis appended to justify deviation from the provincial norm.)

Seed and Seedling Purchases

Seed purchases should be as per the Forest Practices Code Seed and Vegetative Material Guidebook found at:
http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/veg/seedtoc.htm

Also see other documents regarding improved stock on the Tree Improvement Branch Web Page at:
http://www.for.gov.bc.ca/TIP/index.htm

Study Projects

Forest Renewal BC will fund the application of models and tools that link stand-level silviculture decisions to the bigger picture of the whole forest. Each forest landscape has a unique pattern of forest types and ages, land-use patterns, and timber supply issues. Therefore, each forest management unit (e.g., timber supply area or tree farm licence) will require a unique strategic mix of silviculture investments to achieve the full potential productivity of its second-growth forest. Beyond this, Forest Renewal will consider operational applications of research results, adaptive management and monitoring that will help meet FRBC strategic priorities.

Complete the Projects Table

The project table will be used to list projects proposed for funding.

Projects Table

Rank	Project Name	FRBC's Cost 2001/2002
		$

- Clearly identify the specific studies that need to be completed to support the program areas.
- Suggest realistic funding needs for 2000/2001.
- Rank the studies within the management unit.
- Studies to be ranked regionally.
- Branch to review and recommend to FRBC based on ROI/consistency/equitability.

Provide Background Information to the Projects

- Project Name
- FRBC Cost 2001/2002
- FRBC total cost
- Funding required by year for the next five years
- Project total cost
- Partners Involved and their contributions
- Provide the history of the project where it is a continuation of an existing project.
- Describe link to Type 1 or 2 silviculture strategies.
- Provide rationale and direct relationship to operational stands level opportunities.
- Specify deliverable.

Project Considerations

Projects are only applicable to operational silviculture trials, testing tools and procedures already developed. The intent is to review applied trials (e.g. monitoring of tools performance over time).

The Type 1 and Type 2 silviculture strategies contain a listing of some potential operationally oriented silvicluture projects that can be recommended for funding.

Studies will compete with operational activities for funding. Therefore, it is important to give the rationale and benefits of the project. The direct relationship of the study to management unit priorities should be clear.

The SH objective will not fund research, but will provide researchers with information needs of this area to researchers.

Optional: Identify research priorities

The following information is optional.

- Provide researchers with research needs of the SH objective
- Identify other funding sources that need to address those needs

Performance Measures

FRBC requires that a table be completed to illustrate the impact of funding the activities proposed for 2001/2002 in this RMP. FRBC has set out a number of key performance measures for activities under the Sustainable Harvest Objective including:

- Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres.
- The economic value of timber on all enhanced forestry treatment areas will be increased by between 5 per cent and 30 per cent.
- Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
- 25,000 hectares will be added back to the commercial forest base through surveys and planting. These are backlog NSR areas. Regeneration surveys are used to identify satisfactorily restocked backlog area.
- 125,000 hectares of previously planted land will be brought to free growing status. These are impeded areas. The purpose is to bring restocked land to free growing status.

Include a table with the RMP showing performance indicators for Forest Renewal BC investments for the 2001/2002 fiscal year. Provide the following information:

Identify the type of **stewardship plan** that guided the development of this RMP such as Type I, Type II, or another type of plan.

Inputs

- Total planned treatment area (hectares) in 2001/2002

Timber Supply

- Potential volume/ha gain (m3/ha/yr)
- Potential total merchantable volume increment in 65 years (m3)
- Estimated number of years reduced to achieve management objectives
- Estimated number of hectares that will be reclassified as stocked (ha)
- Estimated number of hectares that will be declared as free growing (ha)

Wood Value

- Improvement in total value at harvest (%) compared to no treatment

Habitat Supply

- Planned area for specific wildlife forage or habitat creation (hectares) in 2001/2002
- Estimated hectares with secondary value provided to biodiversity.

Employment

- Estimated total full time equivalent positions (FTE)

Attachment 1 Management Unit RMP Requirements

This section contains the minimum information to be contained in the RMP for each management unit. A regionally developed RMP is needed for woodlots (or woodlot associations) as well.

An overall description of the existing timber supply, timber quality and habitat supply issues in a management unit, and a program of silviculture investments is needed.

The RMP may be based on detailed forest level silviculture strategy, i.e., Type 1 or Type 2 silviculture strategies. Some TFL Management Plans have detailed resource management plans and strategies. The Timber Supply Review and TFL management plans can be useful sources of information. For management units where equivalent or better information does not exist, use the following outline.

Management Unit Basic Information

Provide, in graphical form where possible, any readily available information regarding the timber harvesting land base that may be relevant to the plan such as:

- Land Area,
- Allowable Annual Cut (AAC),
- Current Harvest Forecast,
- Site Class Profile,
- Age Class Profile,
- Tree Species Profile, and
- Forecasted timber quality profiles based on different silvicultural investments.

Identify the key issues affecting timber supply, from a timber quantity, quality and health perspective, and from a biodiversity and habitat supply perspective. If incremental silviculture has a role in managing habitat supply, also include these relevant issues.

Incremental Silviculture History

As a first priority for incremental funding,

1. Document recent incremental silviculture history; and
2. Classify whether or not it has been included in the basis for the most recent AAC determination.

Background to Investment Decisions

Opportunities to Increase Timber Supply

1. Document opportunities to increase timber supply and provide supporting rationale.
2. Indicate which are the most favorable treatments or treatment regimes.
3. Where possible, provide any supporting research or growth and yield information that is directly relevant to the management unit.

4. Develop, as appropriate, strategies that may be employed to increase future timber supply during the following time frames (or other suitable breakdown):
   - Short Term: 1 - 20 years;
   - Medium Term: 21 years to the commencement of a steady long term harvest level (the transition period between the short and long terms); and
   - Long Term: the period of a steady long term harvest level.

Opportunities to Improve Timber Quality

Where possible,

1. Specify the desired product objectives at the log level. If product objectives do not exist, breakdown into fibre logs, sawlogs and premium logs.
2. Describe the characteristics of each of these. For example,
   - Define sawlog as any log with a top diameter inside bark 10 cm, or
   - Define a sawlog stand as any stand with a minimum DBH of 25 cm and a minimum volume/ha of 300 m^3.
3. Identify and discuss potential treatments that may achieve the desired product objectives.
4. Where possible, provide any supporting research or growth and yield information that is directly relevant to the management unit.
5. Document existing strategies, or if strategies do not exist, formulate potential strategies for maintaining or improving the quality of the timber supply. In the absence of any other target or strategy, consider what it may take to achieve a target of 15% premium logs.

A specific target for sawlogs and fibre logs may not be necessary where the standard silvicultural regimes and the AAC are based on sawlog quality second growth stands.

Habitat Supply

Strategies and guidelines regarding biodiversity and specific habitat supply issues include the Identified Wildlife Management Strategy, Biodiversity Guidebook, Guidelines for Maintaining Biodiversity During Juvenile Spacing, Habitat Guidelines for Enhanced Silviculture (draft), etc.

1. If information is available, identify specific issues regarding habitat supply and biodiversity within the management unit.
2. Identify opportunities for utilizing silviculture activities to mitigate habitat supply problems or opportunities to enhance habitat quality.
3. List opportunities to enhance habitat supply/biodiversity based on existing strategies and guidelines identifying general geographic locations where opportunities exist.
4. Provide information to maximize opportunities to increase the diversity within second growth forests.

Working Targets

In keeping with the above documentation, propose a set of working targets for timber quantity and quality. For example,

Volume target: a working target for timber supply might be to maintain the existing harvest level for the next 50 years, followed by a 10% increase to a steady long term harvest level.

Quality target: A working target for timber quality might be to maintain the current quality profile throughout the planning horizon.

Habitat supply/biodiversity target: Develop and specify, as appropriate, strategies to enhance habitat supply/biodiversity indicating time frames for realizing the desired values.

Opportunities to achieve FRBC Performance Goals

Recent program levels form a baseline comparison for the submitted strategy. Proposed programs should not be unrealistic, in comparison to historic levels.

1) Propose a program by incremental silviculture activity, by year for five years that will achieve the targets and strategies.
2) The program should be within the reasonable range of historic funding levels.
3) If relevant, indicate which parts of the program are necessary to achieve the assumptions regarding incremental silviculture in the current AAC determination.

Projected Job Outcomes

Identify the job outcomes of the proposed program, where possible:

1. The immediate outcomes directly associated with carrying out the program activity.
2. The long term job outcomes associated with increased timber quantity or quality.

References

List relevant reference material used in the development or documentation of the strategy. This section is optional.

Attachment 2. Strategies, Principles, Objectives, Priorities

Introduction

This section summarizes provincial principles and priorities governing silviculture. Recommended treatments in RMPs should be linked to the forest management objectives and guidelines described in subsequent sections and, where they exist, regional strategies and TSA/TFL objectives.

Government Goals

Management unit and regional incremental silviculture strategies are to contribute to achieving Government Goals. Government's goals can be characterized as:

- Sustainable forest management;
- Maintaining a healthy environment;
- Community stability; and
- A strong forest sector.

Interim Provincial Incremental Silviculture Strategy

Regional and management unit incremental silviculture strategies are to be in keeping with legislation and developed within the context of the *Incremental Silviculture Strategy for British Columbia (interim)*. Incremental silviculture strategies must also be consistent with higher level plans under the Forest Practices Code.

Principles

The **Ministry of Forests** recommends incremental silviculture strategies and plans consider the following guiding principles:

- **Diversified Portfolio of Forest Conditions** - British Columbia can minimize risk and better respond to changing market conditions by treating stands in a way that ensures that forests produce a diversified portfolio of outputs on the provincial land base. Management units within the provincial land base may target specific outputs as part of that overall diversified portfolio.
- **Balance** - A balanced portfolio of regeneration, stand tending and forest health activities will develop a diversified, stable base of contractors and maintain technical expertise. Treatments to regenerate backlog NSR sites and maintain the health and vigor of forest stands often represent opportunities for achieving investment, timber supply, and social objectives.
- **Forest Planning** - A TSA/TFL management plan is prerequisite to stand level operations. Management plans should specify what future forest products, amenities and habitat and biodiversity conditions are desired, and identify the management regimes and forest structure necessary to achieve these objectives.
- **Timber Supply Considerations** - Management unit priorities should ensure that Timber Supply Review considerations and needs are addressed. Silviculture activities should be designed to ensure that appropriate management assumptions are met.

- **Stand Treatment** - Stand level treatments should be clearly linked to TSA and TFL objectives and illustrate how proposed activities meet local economic, social and environmental objectives. Stand Management Prescriptions (SMPs) should reflect, as nearly as possible, the future objectives of the forest management unit, within the constraints presented by local site and stand conditions.

- **Forest Structure** - The density management regimes and forest structure necessary to achieve biological, economic and forest management TSA and TFL objectives should be defined. In the absence of specified management unit objectives, the range of stand density in managed and unmanaged second growth stands should vary to ensure adequate diversity in future forest structure and habitat conditions.

- **Silviculture for Multiple Objectives** - Silviculture treatments can be used to maintain riparian areas, enhance biodiversity, create employment, promote community stability, enhance volume or value, modify animal and insect habitat quality and improve visual quality. Total treatment benefits should be considered when ranking priorities and evaluating project proposals.

- **Fiscally Responsible** - Silviculture investments should be cost effective. When activities are undertaken to achieve non-investment objectives, other benefits should be clearly defined. Funds should be distributed in a manner that will ensure that desired future forest conditions are achieved.

- **Forest Health** - The impact of proposed treatments on stand and forest health must be considered when evaluating proposals. Areas considered for inclusion in the update must have a low risk of significant losses to fire, insects, disease, or mammals. The risk of the stand being alienated for other single uses in the near future should also be low.

- **Greatest Common Good** - focus funding and silviculture activities on achieving the changes in forest condition that lead to the greatest common good for the TSA, TFL or region as a whole. For TSAs and TFLs, MoF, MELP and industry work collaboratively to identify objectives, priorities and actions to achieve desired forest conditions.

The **Ministry of Environment, Lands and Parks** recommends incremental silviculture strategies and plans be developed considering the guiding principles in *Strategic Direction for Habitat Protection*, MELP, March 1996.

Interim Provincial Timber Supply Objectives

Studies using factor analysis methodology indicate that, with silvicultural and other interventions, a steady long-term timber supply may be achieved that could support future harvests at today's harvest levels. In the interim, an adjustment period will occur during which harvest levels can be expected to be below long-term steady-state levels. The reduced harvest level during this transition period is referred to as the "interim shortfall".

Timber supply must adjust in this period to factors such as:

- Evening the age class distributions;
- Transition from harvesting primarily in old growth to second growth forests;
- Changes to forest practices and regulations;
- Improved knowledge and experience with: the margins of economic accessibility and merchantability; estimates of standing timber inventory and forest productivity; inventories of habitat and biodiversity values and the requirements to sustain them; and
- Alienation of portions of the timber harvesting land base for other purposes.

The quality of harvested timber has gradually declined over time. Without silvicultural intervention (such as spacing with pruning), quality is likely to continue to decline.

Requiring long rotations for a significant proportion of stands may contribute to produce a certain proportion of premium quality sawlog timber. The extent to which long rotations will adequately provide premium quality wood is not known at this time.

In developing management unit strategies, consider the provincial targets for timber quantity and quality contained in the *Incremental Silviculture Strategy for British Columbia (interim)*. Also, consider these interim provincial strategic objectives:

Timber Supply

Objective 1: Maintain **current harvest levels** as long as possible without creating disruptive shortfalls in future timber supplies.

Objective 2: Create a long term timber supply capable of supporting a **steady long-term provincial harvest level** similar to current levels.

Objective 3: **Minimize the interim shortfall** in provincial harvest anticipated before a steady long-term timber supply is achieved.

Timber Quality

Objective 4: Create a long-term timber supply that will enable the **timber quality profile** of future harvests to be the same or better than the current profile.

Mitigation activities for the volume objective as described in objective 1 and 3 are the highest priority. In selecting activities, habitat supply should be carefully considered and appropriately incorporated. Given the principles of diversity and minimizing risk, the importance of the quality objective 4 is of increasing importance.

Not every management unit has the same capability to contribute to these interim provincial objectives. A balance needs to be achieved regionally across units.

Interim Provincial Biodiversity/Habitat Supply Objectives

Management of immature and second growth forests needs to incorporate, where appropriate, objectives outlined in the Biodiversity Guidebook, Landscape Unit Planning Guide, and Identified Wildlife Management Strategy. Planning to maintain biodiversity will occur at a variety of levels: provincial, regional, subregional, and stand.

The habitat needs of most forest and range organisms can be provided for by maintaining or managing for a variety of patch sizes, seral stages, and forest stand attributes and structures across a variety of ecosystems and landscapes.

Attachment 3. Contact and Support Personnel

Regional and headquarters staff have assisted in the preparation of these guidelines. A number of specialists are available to provide clarification and additional supporting guidance on this document:

- MoF Forest Sector Initiatives Managers (FSIMs) at the region level provide regional guidance;
- Rick Brand (MoF) can provide guidance on the overall provincial RMP process;
- MELP FRP Coordinators at the region level provide overall regional MELP guidance;
- Lorne Bedford and John McClarnon (MoF) provide provincial level guidance on the backlog program;
- Ralph Winter (MoF) provides information on the *Incremental Silviculture Strategy for British Columbia (interim)* and stand tending guidance;
- John Muir and Tim Ebata (MoF) provide provincial level guidance on Forest Health programs; and
- Colene Wood and Mike Feinger (MELP) provide provincial level habitat supply and biodiversity guidance.

Post recommendations to improve these guidelines to John.Brodie@gems4.gov.bc.ca.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Management Unit Name

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
   Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
   The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Management Unit Name
Enhanced Forestry Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Stand Tending	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	0	0	0	0	0	0.00	0
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Other	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Planning and prescriptions							0
Total dollars							0
Forest Health Enhancement							
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Habitat Supply and Biodiversity Enhancement							
Treatments	0	0	0	0	0	0.00	0
Domestic Range							
Treatments	0	0	0	0	0	0.00	0
Enhanced Forestry Activities - Management Unit Total							
Surveys	0	0	0	0	0	0.00	0
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	0	0	0	0	0	0.00	0
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Planning and prescriptions							0
Studies funding							0
Total dollars							0

Management Unit Name
Backlog Program Table
For the 2001/02 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2001/02	
Legal Obligations	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Surveys	0	0	0	0	0	0.00	0
Site preparation	0	0	0	0	0	0.00	0
Planting	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Max. density spacing	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Total legal obligations							0
Backlog Reforestation							
Surveys	0	0	0	0	0	0.00	0
Site preparation	0	0	0	0	0	0.00	0
Planting	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total backlog reforestation							0
Impeded areas							
Surveys	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total impeded areas							0
Site Restoration							
Fill planting	0	0	0	0	0	0.00	0
Rehabilitation	0	0	0	0	0	0.00	0
Reforestation	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning dollars							0
Total site restoration							0
Backlog Program Activities - Management Unit Total							
Surveys	0	0	0	0	0	0.00	0
Site preparation	0	0	0	0	0	0.00	0
Planting	0	0	0	0	0	0.00	0
Brushing	0	0	0	0	0	0.00	0
Density spacing	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0
Seed purchase	0	0	0	0	0	0.00	0
Prescriptions and planning							0
Recommended studies							0
Total backlog program							0

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Management Unit Name
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2001/02 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.34	0	0.25	0	1.9	0.25	0	0	0.40

Years the factor will affect:

65	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest	5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2001/2002			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			0
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			0
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply			
Replace with (A) if a more exact estimate is calculated			0
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2001/2002			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			
Estimate area that will be classified as free growing after a survey in 2001/2002			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Management Unit Name
Performance Measures Based on Activities Planned for 2001/2002
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2001/2002**	0	0	0	0	0	0	0	0	0	0	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.34	0	0.25	0	1.9	0.25	0	0	0.40		
1.2	Years the factor will apply	65	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	0	0	0	0	0		1
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	0	0	0	0	0	0	0	0	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	0	0	0	0
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat creation in 2001/2002 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Management Unit Name
Management Unit Summary Table
For the 2001/02 Fiscal Year

	Treatment Area Goals (ha)					Plan 2001/02	
	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	0	0	0	0	0	0	0
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	0	0	0	0	0	0	0
Planning, prescriptions and seedlings							0
Totals	0	0	0	0	0		0

Performance Measures

Potential total merchentable volume increment in 65 years	1 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	0 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat creation	0 ha
Estimated area with secondary value provided to biodiversity	0 ha